HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   UNITED STATES DISTRICT COURT

2   NORTHERN DISTRICT OF CALIFORNIA

3   SAN FRANCISCO DIVISION

4   ORACLE AMERICA, INC.,   )

5   Plaintiff,   ) Case No.

6   vs.   ) CV 10-03561 WHA

7   GOOGLE, INC.,   )

8   Defendant.   )

9   _____) VOLUME I

10

11   HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

12   VIDEOTAPED 30(b)(6) DEPOSITION OF GOOGLE, INC.

13   DESIGNEE: FELIX LIN

14   Palo Alto, California

15   Monday, December 14, 2015

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21

22   Reported by:

23   KELLI COMBS, CSR No. 7705

24   Job No. 2196295

25   Pages 1 - 184

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8   vs.   ) CV 10-03561 WHA

9   GOOGLE, INC.,   )

10   Defendant.   )

11   _____)

12

13

14

15   VIDEOTAPED DEPOSITION OF FELIX LIN, Volume I, taken

16 on behalf of Plaintiff, at King & Spalding, 601 S.

17 California Street, Suite 100, Palo Alto, California,

18 beginning at 10:00 a.m., on Monday, December 14, 2015,

19 before KELLI COMBS, Certified Shorthand Reporter No.

20 7705.

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Page 2

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1   APPEARANCES:

2   For the Plaintiff:

3   ORRICK, HERRINGTON & SUTCLIFFE LLP

4   BY: ANNETTE L. HURST, ESQ.

5   MICHELLE O'MEARA, ESQ.

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7   San Francisco, California 94105-2669

8   415.773.4585

9   ahurst@orrick.com

10

11   For the Defendant:

12   KEKER & VAN NEST LLP

13   BY: STEVEN P. RAGLAND, ESQ.

14   633 Battery Street

15   San Francisco, California 94111

16   415.391.5400

17   sragland@kvn.com

18

19

20 Also Present:

21 Jefree Anderson, Video Operator

22 Chester Day, In-house counsel for Google

23

24

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1   I N D E X

2   WITNESS

3   FELIX LIN

4 EXAMINATION   PAGE

5   BY MS. HURST   7

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1   E X H I B I T S

2   EXHIBITS FOR IDENTIFICATION

3 NUMBER   PAGE

4 Exhibit 5089 Article from Ars Technica   100
              entitled "The Pixel C was

5   Probably Never Supposed to
              Run Android" dated

6   December 10, 2015

7 Exhibit 5090 Wall Street Journal article   106
              entitled "Alphabet's Google

8   to Fold Chrome Operating
              System into Android" dated

9   October 29, 2015

10 Exhibit 5091 Large printout of a single   124
               tab in a worksheet,

11   produced natively, entitled
               "Google Mobile Search

12   Services," Bates stamped
               GOOGLE-22-00113654

13

   Exhibit 5092 Tab in a spreadsheet titled   144

14   "AdSense Revenue Report,
               Summary Format," Bates

15   stamped GOOGLE-22-00113654

16 Exhibit 5093 Mobile application and   156
               distribution agreement,

17   Bates stamped GOOG-00130126
               through -40

18

19   PREVIOUSLY MARKED EXHIBITS

20   EXHIBIT   PAGE

21   5003   48

22

23

24

25

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2 (Pages 2 - 5)

1   Palo Alto, California; Monday, December 14, 2015
2   10:00 a.m.
3   P R O C E E D I N G S
4   THE VIDEOGRAPHER: Good morning, we're on
5 the record at 10:00 a.m. on December 14th, 2015.
6 This is the video recorded deposition of Felix Lin.
7 My name is Jefree Anderson, here with our court
8 reporter, Kelli Combs. We're here from Veritext
9 Legal Solutions at the request of counsel for the
10 Plaintiff.
11   This deposition is being held at 601 South
12 California Avenue in Palo Alto, California. The
13 caption of this case is Oracle America, Incorporated
14 versus Google, Incorporated, Case Number CV
15 10-03561.
16   Please note that audio and video recording
17 will take place unless all parties agree to go off
18 the record. Microphones are sensitive and may pick
19 up whispers, private conversations and cellular
20 interference, so please be aware of that.
21   Please state your name and the firm you
22 represent, beginning with the noticing attorney.
23   MS. HURST: Annette Hurst from Oracle
24 Herrington & Sutcliffe for Plaintiff Oracle, and
25 with me this morning is Michelle O'Meara, also of my

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1 firm.
2   MR. RAGLAND: Steven Ragland,
3 Keker & Van Nest, on behalf of Google.
4   MR. DAY: Chester Day, Google, Inc.
5   THE VIDEOGRAPHER: Will the court reporter
6 please swear in the witness.
7   FELIX LIN,
8   after having been duly sworn, testified as follows:
9   ---o0o---
10
11   THE VIDEOGRAPHER: Please begin.
12   EXAMINATION
13 BY MS. HURST:
14   Q   Good morning, Mr. Lin.
15   A   Good morning.
16   Q   Have you ever been deposed before?
17   A   No.
18   Q   All right.
19   Your counsel has probably explained to you
20 how it works, but I'll just go over a few ground
21 rules. I'll be asking questions, and it would help
22 the court reporter take down accurately the answers
23 if you always answer audibly with some kind of a
24 word, "yes," "no," "I don't know," whatever it is,
25 rather than a grunt or a nod.

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1   Do you understand that?
2   A   Yes.
3   Q   All right.
4   And although it can be sometimes difficult
5 because everybody wants to get this over with, if
6 you wait until I finish my questions before you give
7 your answers so that we're not talking over each
8 other, and I'll commit to you to do the same. That
9 will also make it easier for the court reporter.
10   Do you understand?
11   A   Yes.
12   Q   All right.
13   You'll have an opportunity to review the
14 transcript that is prepared after the deposition,
15 make revisions to any answers that you think require
16 correction. But if you do change your answers in
17 some material way, then I may have the opportunity
18 to comment on that before the jury as to your
19 credibility.
20   Do you understand that?
21   A   Yes.
22   Q   All right.
23   By whom are you presently employed?
24   A   Google.
25   Q   Anyone else?

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1   A   No.
2   Q   And what is your current title with
3 Google?
4   A   Director of Product Management.
5   Q   What are your general duties and
6 responsibilities as a Director of Product Management
7 at Google?
8   A   Today, I primarily work with hardware
9 partners, folks like Acer and others, who are
10 building hardware built on Google's operating system
11 platforms.
12   Q   Which operating system platforms?
13   A   Chrome OS and Android.
14   Q   When did you join Google?
15   A   April of 2009.
16   Q   And what was your title at that time?
17   A   Group Product Manager.
18   Q   And what product or products --
19   For which product or products did you have
20 responsibility when you joined Google?
21   A   Chrome OS.
22   Q   How, if at all, have your responsibilities
23 changed over time since you joined Google in May of
24 2009?
25   A   I've been working on Chrome OS since the

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3 (Pages 6 - 9)

1 very beginning, and just last year about this time,
2 I picked up responsibility for Android Partner
3 Engineering.
4   Q   When you joined Google, was there a
5 Chrome OS?
6   A   No. The product had not been announced
7 yet.
8   Q   Was it being worked on at the time?
9   MR. RAGLAND: I'll object to outside the
10 scope of the 30(b)(6) topics on which Mr. Lin is
11 presented.
12   But you may answer.
13   THE WITNESS: Sure. We were in the
14 initial discussions about getting the project
15 started.
16 BY MS. HURST:
17   Q   So you were there from the very beginning
18 with Chrome OS?
19   A   There were some conversations that were --
20 that had taken place before I had gotten there.
21   Q   Had the decision yet been made to go
22 forward in creating Chrome OS?
23   A   No.
24   MR. RAGLAND: Same objection. Outside the
25 scope.

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1 BY MS. HURST:
2   Q   With whom did you participate in the
3 discussions whether Google should create Chrome OS?
4   MR. RAGLAND: And if I could just --
5 Ms. Hurst, if I could have a continuing objection to
6 the question about Chrome OS as outside the scope of
7 the topics, that way I won't need to interrupt you
8 each time.
9   MS. HURST: Well, Topic 5 specifically
10 encompasses non-Android operating systems, so this
11 is foundation for that topic. I don't agree with
12 you, but if you just object and say "beyond the
13 scope" when you think it's beyond the scope, you
14 will have preserved the objection.
15   THE WITNESS: What was your question
16 again?
17 BY MS. HURST:
18   Q   With whom did you participate in
19 discussions whether Google should create Chrome OS?
20   MR. RAGLAND: Objection; outside the
21 scope.
22   THE WITNESS: Linus Upson.
23 BY MS. HURST:
24   Q   Anyone else?
25   A   Caesar Sengupta.

Page 11

1   Q   Anyone else?
2   A   Not that I recall.
3   Q   What about Mr. Pichai? Did he participate
4 in those discussions?
5   A   I don't recall whether I had direct
6 conversations with him.
7   Q   Was he ultimately responsible for
8 participating in the decision whether to go forward
9 with Chrome OS in some way?
10   MR. RAGLAND: Objection; outside the
11 scope.
12   THE WITNESS: I think he was involved in
13 the conversations, yes.
14 BY MS. HURST:
15   Q   And have you ever reported up through
16 levels of management that included Mr. Pichai?
17   A   Yes.
18   Q   And was that the case while you were
19 working on Chrome OS?
20   A   Yes.
21   Q   And did you at any point in time
22 understand him, Mr. Pichai, to be the person
23 ultimately responsible for Chrome OS?
24   A   Yes.
25   MR. RAGLAND: Objection to form.

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1   If you'll wait just one moment, I'll put
2 an objection in.
3 BY MS. HURST:
4   Q   And would you correct my pronunciation of
5 any names if they're wrong today? I don't want to
6 offend anyone by getting the names wrong.
7   Is that -- is that all right with you?
8   A   Sure. Yes.
9   Q   Thank you.
10   And during what period of time did you
11 understand Mr. Pichai to be responsible for
12 Chrome OS?
13   MR. RAGLAND: Objection to form.
14   THE WITNESS: Pretty much from the
15 beginning.
16 BY MS. HURST:
17   Q   Now, in 2009, Google had already created
18 and announced Android; is that correct?
19   A   Yes.
20   Q   And Android is an operate -- or includes
21 an operating system, true?
22   MR. RAGLAND: Objection; form.
23   THE WITNESS: Yes.
24 BY MS. HURST:
25   Q   So why did Google create another operating

Page 13

4 (Pages 10 - 13)

1 system with Chrome?
2   MR. RAGLAND: Objection; outside the scope
3 and form.
4   THE WITNESS: Well, when we were looking
5 at building Chrome OS, there were a lot of
6 considerations that we had, and the things that we
7 wanted to do, we couldn't completely do with
8 Android.
9 BY MS. HURST:
10   Q   Did you ever consider simply adding to
11 Android in order to make it suitable for those
12 additional uses?
13   MR. RAGLAND: Objection; form and outside
14 the scope.
15   THE WITNESS: There were a lot of people
16 who were looking at it. I believe that we
17 considered Android, yes.
18 BY MS. HURST:
19   Q   Okay.
20   And what reasons, if any, did you have for
21 not simply using Android for the -- for the
22 operating system uses that you ultimately envisioned
23 for Chrome?
24   MR. RAGLAND: Same objections.
25   THE WITNESS: Well, I think, if I recall,

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1 the key goals that we had for Chrome OS were speed,
2 simplicity and security, and as we looked at, you
3 know, the key things that we wanted to accomplish,
4 we couldn't do all the things that we wanted just
5 based on Android.
6 BY MS. HURST:
7   Q   But wouldn't it have been easier to modify
8 Android to meet whatever additional goals you had
9 than to start from scratch and create an entirely
10 new operating system?
11   MR. RAGLAND: Objection to form and
12 outside the scope.
13   THE WITNESS: It's hard to say, but we
14 chose to go down the path that we did.
15 BY MS. HURST:
16   Q   Is it true that Google is now considering,
17 in essence, reuniting Google to its two operating
18 systems into a single operating system?
19   MR. RAGLAND: Objection; outside the scope
20 and form.
21   I'll also take this opportunity to
22 designate the transcript as Highly Confidential,
23 Attorneys' Eyes Only subject to review, as we've
24 been doing in other depositions.
25   THE WITNESS: What was the question again?

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1 BY MS. HURST:
2   Q   Is it true that Google is now considering
3 or has been recently considering whether to reunite
4 its two operating systems so that it is offering
5 only a single operating system to the marketplace?
6   MR. RAGLAND: Same objections.
7   THE WITNESS: Well, we've been looking at,
8 you know, bringing capabilities of Android to
9 Chrome OS so that we can run applications written
10 for Android on Chrome OS, and we've been looking at
11 ways of bringing features of Chrome OS to Android,
12 but specifically having the end goal of what you
13 described being only one OS, that's not a specific
14 goal.
15 BY MS. HURST:
16   Q   Why not?
17   MR. RAGLAND: Objection; outside the
18 scope.
19   THE WITNESS: That's just not our specific
20 goal.
21 BY MS. HURST:
22   Q   Well, are there any reasons or impediments
23 as to why Google has explicitly decided not to have
24 a single operating system?
25   MR. RAGLAND: Objection; form and outside

Page 16

1 the scope.
2   THE WITNESS: It's just not a goal. I
3 mean, we have goals for Chrome OS, and we have goals
4 for Android.
5 BY MS. HURST:
6   Q   Wouldn't it be easier as a business matter
7 in the marketplace to have a single operating system
8 that you coalesce your efforts around for marketing,
9 distribution and other purposes?
10   MR. RAGLAND: Objection to form and
11 outside the scope.
12   THE WITNESS: I'm not sure I can speak to
13 that. I mean, it would just -- it would be
14 speculation about -- I mean, what people's goals
15 are.
16 BY MS. HURST:
17   Q   Is it true that analysts who follow Google
18 have criticized its strategy for having two
19 operating systems and suggested that it should speak
20 with a single voice and offer one operating system?
21   MR. RAGLAND: Objection to form and
22 outside the scope.
23   THE WITNESS: I think there's lots of
24 analysts who write lots of things about Google.
25

Page 17

5 (Pages 14 - 17)

1 BY MS. HURST:
2   Q   Well, have you personally ever seen any
3 criticism of Google for operating -- offering two
4 operating systems?
5   MR. RAGLAND: Outside the scope.
6   THE WITNESS: I've seen some, yes.
7 BY MS. HURST:
8   Q   And as the -- one of the leaders of Chrome
9 operating system, certainly you have considered
10 whether there ought to be a single operating system
11 offered by Google, true?
12   MR. RAGLAND: Objection to form and
13 outside the scope.
14   THE WITNESS: My focus has been on
15 Chrome OS and more recently also on Android, and I
16 see benefits to both.
17 BY MS. HURST:
18   Q   Well, is there any technical reason why
19 Chrome OS and Android could not be unified into a
20 single operating system?
21   MR. RAGLAND: Objection to form and
22 outside the scope.
23   THE WITNESS: I think there are lots of
24 technical challenges that would make it extremely
25 difficult for there to be only one operating system

Page 18

1 that would cover both Chrome OS and Android.
2 BY MS. HURST:
3   Q   But you have been able to create a
4 solution that will allow Android applications to run
5 on Chrome OS, true?
6   MR. RAGLAND: Objection to form and
7 outside the scope.
8   THE WITNESS: We've managed to get some
9 Android applications running on Chrome OS.
10 BY MS. HURST:
11   Q   And the -- are you familiar with
12 ARC Welder?
13   A   Yes.
14   Q   What is ARC Welder?
15   MR. RAGLAND: Objection; outside the
16 scope.
17   THE WITNESS: ARC Welder is a tool that
18 allows application developers to try to get their
19 applications running on Chrome OS.
20 BY MS. HURST:
21   Q   And why did you create ARC Welder?
22   MR. RAGLAND: Same objection.
23   THE WITNESS: We wanted to make it
24 possible for application developers who were
25 familiar and had built Android applications to make

Page 19

1 it possible for those applications to also run on
2 Chrome OS, in addition to Android.
3 BY MS. HURST:
4   Q   And what benefits did you perceive from
5 doing that?
6   MR. RAGLAND: Same objection.
7   THE WITNESS: Well, there are benefits to
8 Chrome OS customers who also have Android devices
9 and are familiar with those applications and would
10 like to have them running on every device that they
11 own.
12 BY MS. HURST:
13   Q   And when you say "customers" in that
14 context, you mean the individual end users?
15   A   End users.
16   Q   And that it would be easier for consumers,
17 human beings out there in the marketplace, to be
18 able to use the same applications across a variety
19 of devices?
20   MR. RAGLAND: Objection to form and
21 outside the scope.
22   THE WITNESS: It's difficult to say. I
23 think that in the case of ARC Welder, we're
24 satis- -- we're looking at creating an opportunity
25 for developers to benefit, but, you know, we

Page 20

1 encourage developers to write for the form factor,
2 so they don't necessarily offer the best solution by
3 simply taking a device -- an application written for
4 a phone and running it on a -- on a larger display.
5 BY MS. HURST:
6   Q   So then why not simply encourage them to
7 develop for Chrome OS devices? I mean, why offer
8 ARC Welder at all?
9   A   We do.
10   MR. RAGLAND: Objection to form and
11 outside the scope.
12   THE WITNESS: We do.
13 BY MS. HURST:
14   Q   And have you been successful in getting
15 many developers of Android applications to port them
16 over to Chrome OS?
17   MR. RAGLAND: Same objections.
18   THE WITNESS: We've seen some success,
19 yes.
20 BY MS. HURST:
21   Q   Can you approximate how many Android
22 applications have been ported over to Chrome OS
23 without use of ARC Welder?
24   MR. RAGLAND: Objection to form and
25 outside the scope.

Page 21

6 (Pages 18 - 21)

1   THE WITNESS: Can you describe what you
2 mean by that?
3 BY MS. HURST:
4   Q   Well, there are some number of Android
5 applications that are available on the Google Play
6 Store.
7   Are you familiar with that?
8   MR. RAGLAND: Same objections.
9   THE WITNESS: Yes.
10 BY MS. HURST:
11   Q   At times, people have estimated that
12 perhaps a million applications might be available in
13 the Google Play Store, true?
14   A   Right.
15   Q   So of those applications, how many have
16 you been successful in attracting for development on
17 Chrome OS without using ARC Welder?
18   MR. RAGLAND: Objection; outside the scope
19 and form.
20   THE WITNESS: Many applications don't have
21 to be ported at all. Facebook, for example, has a
22 Web app that runs just fine. They don't have to
23 port the Android app to Chrome OS.
24 BY MS. HURST:
25   Q   Okay.

Page 22

1   But that would be taking advantage of just
2 native Web browsing capability, right?
3   A   Sure.
4   Q   So let's focus on Android applications.
5   How many of them, if any, that are not
6 otherwise available to run in a browser have been
7 ported to Chrome OS without the use of ARC Welder?
8   MR. RAGLAND: Objection to form and
9 outside the scope.
10   THE WITNESS: There are a very small
11 number today.
12 BY MS. HURST:
13   Q   And have you been successful in getting a
14 greater number of applications that are not
15 otherwise available to run in a browser ported to
16 Chrome OS with the use of ARC Welder?
17   MR. RAGLAND: Objection to form and
18 outside the scope of the noticed topics.
19   THE WITNESS: We haven't been able to get
20 very many additional applications over.
21 BY MS. HURST:
22   Q   And why do you think that is?
23   MR. RAGLAND: Same objections.
24   THE WITNESS: I don't actually know, to be
25 honest.

Page 23

1 BY MS. HURST:
2   Q   And having -- well, let me put it to you
3 this way: Are you satisfied that you have been
4 successful in getting developers of Android
5 applications that are not otherwise available for
6 use in the browser to work with the Chrome OS?
7   MR. RAGLAND: Objection to form, outside
8 the scope of noticed topics.
9   THE WITNESS: We haven't gotten -- no.
10 BY MS. HURST:
11   Q   You haven't gotten the traction that you
12 would like to get, true?
13   A   Correct.
14   MR. RAGLAND: Same objections.
15 BY MS. HURST:
16   Q   How long has ARC Welder been in existence?
17   MR. RAGLAND: Objection to form, outside
18 the scope.
19   THE WITNESS: I can't recall exactly how
20 long, but it seems within the last year.
21 BY MS. HURST:
22   Q   Would you say that's a relatively new
23 effort?
24   A   Yes.
25   MR. RAGLAND: Same objections.

Page 24

1 BY MS. HURST:
2   Q   Have you discussed or considered within
3 Google discontinuing the use of Chrome OS as a
4 stand-alone operating system?
5   MR. RAGLAND: Objection to form, outside
6 the scope.
7   THE WITNESS: No.
8 BY MS. HURST:
9   Q   Have you discussed or considered within
10 Google folding Chrome OS into some unified operating
11 system with Android such that Chrome OS would no
12 longer be a stand-alone operating system?
13   A   Absolutely not.
14   MR. RAGLAND: Same objections.
15   (Reporter clarification.)
16   MR. RAGLAND: Make it easier for the court
17 reporter.
18   THE WITNESS: Sorry about that.
19   MR. RAGLAND: I think you might need to
20 answer that question again, if you need it read
21 back.
22   MS. HURST: It's on here.
23 BY MS. HURST:
24   Q   Would you agree that major platform
25 providers in the marketplace are working towards the

Page 25

7 (Pages 22 - 25)

1 goal of having a unified experience for their
2 consumers across all devices?
3   MR. RAGLAND: Objection to form, outside
4 the scope of the noticed topics.
5   THE WITNESS: Could you ask the question
6 again?
7 BY MS. HURST:
8   Q   Sure.
9   Would you agree that the major platform
10 providers in the marketplace are working towards the
11 goal of having a unified experience for their
12 consumers across all devices?
13   MR. RAGLAND: Same objections.
14   THE WITNESS: Which companies are you
15 thinking about?
16 BY MS. HURST:
17   Q   Well, let's take Apple as an example,
18 Microsoft as an example.
19   MR. RAGLAND: Same objections.
20   THE WITNESS: It's hard for me to talk
21 about strategies of other companies. If you're
22 asking as a consumer what am I seeing, I can answer
23 that.
24 BY MS. HURST:
25   Q   All right. And how would you?

Page 26

1   MR. RAGLAND: Objection; outside the
2 scope.
3   THE WITNESS: I'd say companies seem to be
4 taking different approaches.
5 BY MS. HURST:
6   Q   Have you -- have you reviewed any analyst
7 reports or other articles in major publications
8 discussing efforts by major consumer technology
9 platform providers to unify their platforms across
10 multiple devices?
11   MR. RAGLAND: Objection to form, outside
12 the scope.
13   THE WITNESS: I've -- I've read a lot, but
14 everything seems all over the map.
15 BY MS. HURST:
16   Q   Is it your understanding now that in order
17 to develop the greatest amount of customer loyalty,
18 it would be best to have consumers with unified
19 platform expectations across all of the devices that
20 they use?
21   MR. RAGLAND: Objection to form, outside
22 the scope of the noticed topics.
23   THE WITNESS: What do you mean by
24 "unified"? What aspects are unified?
25

Page 27

1 BY MS. HURST:
2   Q   Right.
3   Well, so applications, right, as we've
4 been discussing, the idea would be to have customers
5 able to access the functionality that they like on
6 any device that they may choose to use at any
7 particular time, whether that be a laptop, a phone,
8 a desktop at the office. Is it true that, in your
9 view, it would be best for customer loyalty and you
10 would get the widest adoption of your platform if
11 customers could have seamless experiences using
12 application functionality on any device that they
13 may choose to use?
14   MR. RAGLAND: Objection to form, outside
15 the scope of noticed topics.
16   THE WITNESS: I see -- I see companies
17 with different strategies being successful with
18 different strategies.
19 BY MS. HURST:
20   Q   Thinking forward and projecting into the
21 future, the ultimate goals for Google, wouldn't you
22 like to have a unified experience for your
23 customers, that is, end user customers, across any
24 device that they may choose to use?
25   MR. RAGLAND: Objection to form, outside

Page 28

1 the scope.
2   THE WITNESS: I see different strategies
3 for different companies playing out.
4 BY MS. HURST:
5   Q   My question now is: Thinking forward and
6 projecting into the future with the goals for
7 Google, wouldn't you like to have a unified
8 experience for your customers, that is, end user
9 customers, across any device that they may choose to
10 use?
11   MR. RAGLAND: Objection to form, outside
12 the scope.
13   THE WITNESS: Google tries to make its
14 applications available on all platforms, yes.
15 BY MS. HURST:
16   Q   And how does Google make money?
17   MR. RAGLAND: Objection; outside the
18 scope, form.
19   THE WITNESS: Today, Google primarily
20 makes money from advertising.
21 BY MS. HURST:
22   Q   And in what forms does Google deliver the
23 advertising from which it makes that money?
24   MR. RAGLAND: Same objections.
25   THE WITNESS: Largely online.

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8 (Pages 26 - 29)

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1 BY MS. HURST:
2   Q   And search engine advertising is an
3 example?
4   A   Yes.
5   Q   And are there other examples of forms of
6 advertising that Google uses to make money?
7   MR. RAGLAND: Same objections.
8   THE WITNESS: Display ads.
9 BY MS. HURST:
10   Q   Any others?
11   MR. RAGLAND: Same objections.
12   THE WITNESS: Video ads.
13 BY MS. HURST:
14   Q   Any others?
15   MR. RAGLAND: Same.
16   THE WITNESS: Application licensing.
17 BY MS. HURST:
18   Q   And any other examples of forms of
19 advertising that Google uses to make money that you
20 can think of?
21   MR. RAGLAND: Objection to form, outside
22 the scope.
23   THE WITNESS: There's keyword advertising.
24 BY MS. HURST:
25   Q   Any others?

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1   MR. RAGLAND: Same objections.
2   THE WITNESS: Not that I'm -- not that
3 come to mind immediately.
4 BY MS. HURST:
5   Q   All right.
6   Now, is keyword advertising the same as
7 search engine advertising, or is it different?
8   MR. RAGLAND: Same objections.
9   THE WITNESS: I guess it depends on how
10 you define it.
11 BY MS. HURST:
12   Q   Okay.
13   What did you have in mind?
14   A   Specifically the AdWords program.
15   Q   And when you say "the AdWords program,"
16 that's a form of keyword advertising?
17   A   Right.
18   Q   And the way that works is that Google
19 sells or auctions to advertisers the right to
20 display their advertisements in connection with
21 consumers searching on certain keywords, true?
22   A   That's generally it, yeah.
23   Q   Okay.
24   And those keywords might be typed into a
25 browser, true?

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1   MR. RAGLAND: Objection; form, outside the
2 scope.
3   THE WITNESS: They could be typed into a
4 browser, that's correct, yeah.
5 BY MS. HURST:
6   Q   And can those keywords be typed into other
7 places as well in order for Google to generate
8 revenue associated with its AdWords program?
9   A   Yes.
10   MR. RAGLAND: Same objections.
11 BY MS. HURST:
12   Q   And where else does the use of keywords
13 enable Google to generate revenue from its AdWords
14 program?
15   MR. RAGLAND: Objection to form, outside
16 the scope.
17   THE WITNESS: People can type search terms
18 into a search box.
19 BY MS. HURST:
20   Q   What is a search box?
21   A   It's a search field on your mobile device.
22   Q   Other than browsers and search box, are
23 there other places that keywords are used as part of
24 the AdWords program?
25   MR. RAGLAND: Same objections.

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1   THE WITNESS: They could be spoken.
2 BY MS. HURST:
3   Q   Any others?
4   MR. RAGLAND: Same objections.
5   THE WITNESS: Not that come to mind.
6 BY MS. HURST:
7   Q   All right.
8   Now, when you said "the search box," where
9 are the -- I'm just going to use the physical world
10 terms, and if it doesn't make sense, you'll tell me.
11 Is that okay?
12   A   Sure.
13   Q   All right.
14   So where are the places that one user
15 might look or find a search box to enter a term that
16 could result in Google earning money as part of
17 keyword advertising in its AdWords program?
18   MR. RAGLAND: Outside the scope.
19   THE WITNESS: And end user could go to
20 Google.com and type search terms into the search
21 field at the top of the page.
22 BY MS. HURST:
23   Q   And where else?
24   A   On many phones there is a Google Search
25 box on the home screen.

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9 (Pages 30 - 33)

1   Q   And do you have any particular name for
2 that home screen Google Search box? Is there any
3 terminology that you use regularly to refer to that?
4   A   I just call it the search box.
5   Q   Okay.
6   We've heard the term from time to time,
7 phone top. Does that mean anything to you?
8   A   I've never actually heard that term,
9 but...
10   Q   Okay. That's fine.
11   A   Yeah.
12   Q   All right.
13   Other than the Google.com search box and a
14 search box on the home screen of a phone, are there
15 other places where a consumer might find a search
16 box that would result in Google getting advertising
17 revenue as part of its AdWords program?
18   MR. RAGLAND: Objection to -- outside the
19 scope and form.
20   THE WITNESS: So people can type search
21 terms directly into the field for the URL in most
22 browsers; however, that can result in a search
23 taking place, it doesn't always mean that Google is
24 generating revenue from the search that happens from
25 that.

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1 BY MS. HURST:
2   Q   It would depend whether that browser
3 directs the search to Google?
4   A   That's right.
5   MR. RAGLAND: Objection --
6   If you wait just a moment.
7   Objection; outside the scope.
8   THE WITNESS: Yes.
9 BY MS. HURST:
10   Q   Are there also applications that have
11 search boxes in them?
12   MR. RAGLAND: Same objection.
13   THE WITNESS: I can't think of any
14 offhand, but I can imagine there are.
15 BY MS. HURST:
16   Q   Are there Google applications that have
17 search boxes in them?
18   MR. RAGLAND: Same objection.
19   THE WITNESS: There is a Google Search
20 application for mobile.
21 BY MS. HURST:
22   Q   And what about the other Google apps such
23 as Gmail or Maps; do those also have search boxes
24 that might lead to opportunities for earning revenue
25 from keyword advertising?

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1   MR. RAGLAND: Objection to form and
2 outside the scope.
3   THE WITNESS: Chrome browser has a URL
4 field that people can search through, yes.
5 BY MS. HURST:
6   Q   As a browser on mobile devices?
7   A   Right.
8   MR. RAGLAND: Same objections.
9 BY MS. HURST:
10   Q   Any other Google applications have a
11 search box built in that might lead to opportunities
12 for Google to earn revenue from keyword advertising?
13   MR. RAGLAND: Objection to form, outside
14 the scope.
15   THE WITNESS: There are search fields in
16 many applications that are designed to help users
17 accomplish what they're looking for; however, most
18 of those don't lead to Google.com. In fact, I can't
19 think of any that link to Google.com.
20 BY MS. HURST:
21   Q   So when you mentioned that there was a
22 Google Search box on the home screen on some --
23 certain phones, what devices did you mean?
24   MR. RAGLAND: Objection; outside the
25 scope.

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1   THE WITNESS: Android's -- Android phones.
2 BY MS. HURST:
3   Q   Any others?
4   MR. RAGLAND: Same objection.
5   THE WITNESS: I don't -- it's possible,
6 but I don't know of any.
7 BY MS. HURST:
8   Q   Are you familiar with any search box on
9 iOS devices?
10   MR. RAGLAND: Objection; outside the
11 scope.
12   THE WITNESS: I don't use an iOS device
13 regularly, and at least on the home screen, I don't
14 recall there being a search box.
15 BY MS. HURST:
16   Q   Are you aware whether on an iOS device a
17 user can swipe down and -- and get a search box?
18   MR. RAGLAND: Objection to form and
19 outside the scope.
20   THE WITNESS: I don't use an iPhone enough
21 to know, but I wouldn't be surprised.

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10 (Pages 34 - 37)

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1 what you mean.
2 BY MS. HURST:
3   Q   Well, let me just back up.
4   How does Google earn money in connection
5 with display advertising?
6   MR. RAGLAND: Objection; outside the
7 scope.
8   THE WITNESS: We have some advertisers who
9 pay Google to place ads on Google properties.
10 BY MS. HURST:
11   Q   Can you give an example of what type of
12 property you're thinking of?
13   MR. RAGLAND: Same objection.
14   THE WITNESS: Google Maps.
15 BY MS. HURST:
16   Q   Is there any way in which Google receives
17 revenue for the display of advertising for sites
18 other than its own; in other words, some kind of an
19 advertising display network?
20   MR. RAGLAND: Objection; outside the
21 scope.
22   THE WITNESS: I believe so.
23 BY MS. HURST:
24   Q   And how does that work?
25   MR. RAGLAND: Same objection.

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1   THE WITNESS: From what I understand,
2 advertisers have creative content that they want to
3 be placed on these sites, and there are content
4 owners who allow those ads to be placed on their
5 sites for a share of the revenue.
6 BY MS. HURST:
7   Q   And what role does Google play in that
8 transaction?
9   MR. RAGLAND: Objection; outside the scope
10 and form.
11   THE WITNESS: We just manage the placement
12 of the content on those websites.
13 BY MS. HURST:
14   Q   And is that --
15   Does Google have agreements with those
16 website providers related to its management of the
17 content of that advertising on their sites?
18   MR. RAGLAND: Same objection.
19   THE WITNESS: I believe so, but I'm not
20 very close to it, to be honest.
21 BY MS. HURST:
22   Q   Other than display advertising on its own
23 properties and the network of other sites where
24 Google manages the placement of ads, are there any
25 other mechanisms whereby, to your understanding,

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17 BY MS. HURST:
18   Q   You mentioned display advertising as a
19 form of advertising on which Google makes money.
20   Is there any mechanism for the use of
21 display advertising in connection with mobile
22 devices?
23   MR. RAGLAND: Objection; outside the scope
24 and form.
25   THE WITNESS: I'm not sure what you're --

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11 (Pages 38 - 41)

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1 it's a -- it's a platform, so if they have installed
2 search extensions from third parties or applications
3 from third parties that have search capabilities,
4 then they would have those as well.
5 BY MS. HURST:
6   Q   Can you give me an example of a type of
7 device that uses Chrome OS?
8   MR. RAGLAND: Objection; outside the
9 scope.
10   THE WITNESS: There's a -- well, lots
11 of -- lots of notebook computers that we call
12 Chromebooks.
13 BY MS. HURST:
14   Q   And is the Chrome OS an open source
15 operating system?
16   MR. RAGLAND: Objection; outside the
17 scope, also to form.
18   THE WITNESS: Chrome OS is based on
19 Chromium OS, which is completely open source.
20 Chrome OS itself is licensed software.
21 BY MS. HURST:
22   Q   So it is --
23   All parts of Chrome OS are not open; is
24 that true?
25   A   That's correct.

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1 frequently they do that?
2   MR. RAGLAND: Same objections.
3   THE WITNESS: I don't know, to be honest.
4 BY MS. HURST:
5   Q   I have previously marked Exhibit 5003 is
6 Plaintiff's Notice of Deposition of Google, Inc.
7   If you would turn to page 7 of
8 Exhibit 5003, Mr. Lin.
9   By the way, just before we go there,
10 Mr. Lin, is there a P&L for Chrome OS?
11   MR. RAGLAND: Objection to form and
12 outside the scope.
13   THE WITNESS: I don't know that there's a
14 P&L at that level.
15 BY MS. HURST:
16   Q   Is there some P&L that Chrome OS is part
17 of?
18   MR. RAGLAND: Same objection --
19 objections, rather.
20   THE WITNESS: I'm sure there must be.
21 BY MS. HURST:
22   Q   Is that something that you ever look at,
23 any financial results associated with Chrome OS?
24   A   I don't look at it.
25   Q   Then how do you measure whether you're

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1   MR. RAGLAND: Objection to form and
2 outside the scope.
3 BY MS. HURST:
4   Q   When you license Chrome OS, do you include
5 in that license other applications that come as part
6 of the default package?
7   MR. RAGLAND: Objection to form and
8 outside the scope of noticed topics.
9   THE WITNESS: We include things like Adobe
10 Flash, licensed fonts, certain media codecs, so
11 there's some additional licensed software, yes.
12 BY MS. HURST:
13   Q   Do you also include the Chrome browser?
14   MR. RAGLAND: Same objections.
15   THE WITNESS: Yes.
16 BY MS. HURST:
17   Q   And when you include the Chrome browser
18 with Chrome OS, do you have the Chrome browser with
19 a default search box setting to Google?
20   MR. RAGLAND: Same objections.
21   THE WITNESS: The out-of-box default
22 search setting is Google, but end users can change
23 it easily.
24 BY MS. HURST:
25   Q   And do you keep statistics on how

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1 being successful?
2   MR. RAGLAND: Objection to form.
3   THE WITNESS: We look at 28-day active
4 users; how many people are actually using
5 Chromebooks.
6 BY MS. HURST:
7   Q   And why is that, in your view, an
8 appropriate measure of success?
9   MR. RAGLAND: Outside the scope.
10   THE WITNESS: For us, it's all about usage
11 and adoption.
12 BY MS. HURST:
13   Q   And why is usage a proxy for success?
14   MR. RAGLAND: Same objection.
15   THE WITNESS: Well, I mean, the more
16 people that use the product, the better it must be.
17 BY MS. HURST:
18   Q   And how does that relate to your financial
19 goals?
20   MR. RAGLAND: Objection; form and outside
21 the scope.
22   THE WITNESS: I don't -- I don't look at
23 it -- I mean, I don't have a P&L, so I don't have
24 specific financial goals.
25

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13 (Pages 46 - 49)

1 BY MS. HURST:
2   Q   How are you compensated?
3   A   I have a base, plus a bonus, plus I have
4 stock.
5   Q   And how is that bonus calculated?
6   A   Based on performance.
7   Q   And what are the metrics of the
8 performance for your bonus?
9   A   I don't have specific metrics. It's
10 really dictated by my supervisor.
11   Q   So there are no --
12   There are no metrics that you understand
13 to be relevant in any way to measuring whether you
14 will receive a bonus?
15   MR. RAGLAND: Objection to form.
16   THE WITNESS: I think that in terms of how
17 I believe I'm measured, it's whether our partners
18 are being successful, whether we're seeing active
19 growth of users and usage. Those are -- those are
20 the primary criteria; whether our partners are happy
21 and successful as hardware partners.
22 BY MS. HURST:
23   Q   What are your approximate numbers of
24 28-day active users for Chrome OS at the present
25 time?

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1   MR. RAGLAND: Objection; outside the
2 scope.
3   THE WITNESS: It's highly confidential,
4 but --
5   MR. RAGLAND: The whole deposition is
6 going to be designated Highly Confidential,
7 Attorneys' Eyes Only.
8   THE WITNESS: Okay. Today it's roughly
9 12 million users.
10 BY MS. HURST:
11   Q   And how -- when was Chrome OS first
12 released?
13   A   2010.
14   Q   Okay.
15   And how has that adoption curve changed
16 over time to arrive at where you are today?
17   MR. RAGLAND: Objection to form and
18 outside the scope of noticed topics.
19   THE WITNESS: Painfully slow.
20 BY MS. HURST:
21   Q   Certainly quite slow in comparison to
22 Android --
23   MR. RAGLAND: Objection to form --
24 BY MS. HURST:
25   Q   -- true?

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1   MR. RAGLAND: Objection to form and
2 outside the scope of noticed topics.
3   THE WITNESS: It's been slow, but recently
4 it's been doubling.
5 BY MS. HURST:
6   Q   How do you explain why Android has
7 received so much greater rate of adoption than
8 Chrome OS?
9   MR. RAGLAND: Objection to form and
10 outside the scope.
11   THE WITNESS: I would say -- I mean, I can
12 speak to Chrome OS. You know, we spent a long time
13 building a very strong foundation, so we sacrificed
14 short-term growth for long-term stability.
15 BY MS. HURST:
16   Q   What do you mean by "stability"?
17   A   Well, we want to make sure that over the
18 long haul, 25 to 30 years, we had a really strong
19 foundation to continue to add features and
20 capabilities. So like a skyscraper, you know, you
21 can dig deep and wide such that you can build a
22 really tall building. If you only had an interest
23 in building a house, you wouldn't spend the time
24 building that same foundation.
25   So for Chrome OS, we spent a long time

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1 building a lot of capabilities around security,
2 ensuring speed, making it possible for us to upgrade
3 the devices over time.
4   So Chrome OS, for example, is unique in
5 that, you know, we update everybody's software every
6 six weeks for every machine we've ever sold.
7 Chrome OS is the only system that does that.
8   Q   Now, when you talk about building a really
9 strong foundation, are you talking about a
10 foundation for applications?
11   MR. RAGLAND: Objection; outside the scope
12 and form.
13   THE WITNESS: It's -- the whole platform,
14 it's applications, it's the complete solution,
15 including hardware.
16 BY MS. HURST:
17   Q   But -- but in order for you to get
18 customers, you've got to have applications that they
19 want to use, right?
20   MR. RAGLAND: Objection -- objection to
21 form and outside the scope of noticed topics.
22   THE WITNESS: We didn't see it that way.
23 The Web didn't have all the applications on day one,
24 but the Web as a platform, being open and free,
25 enabled, you know, the fastest growth of almost any
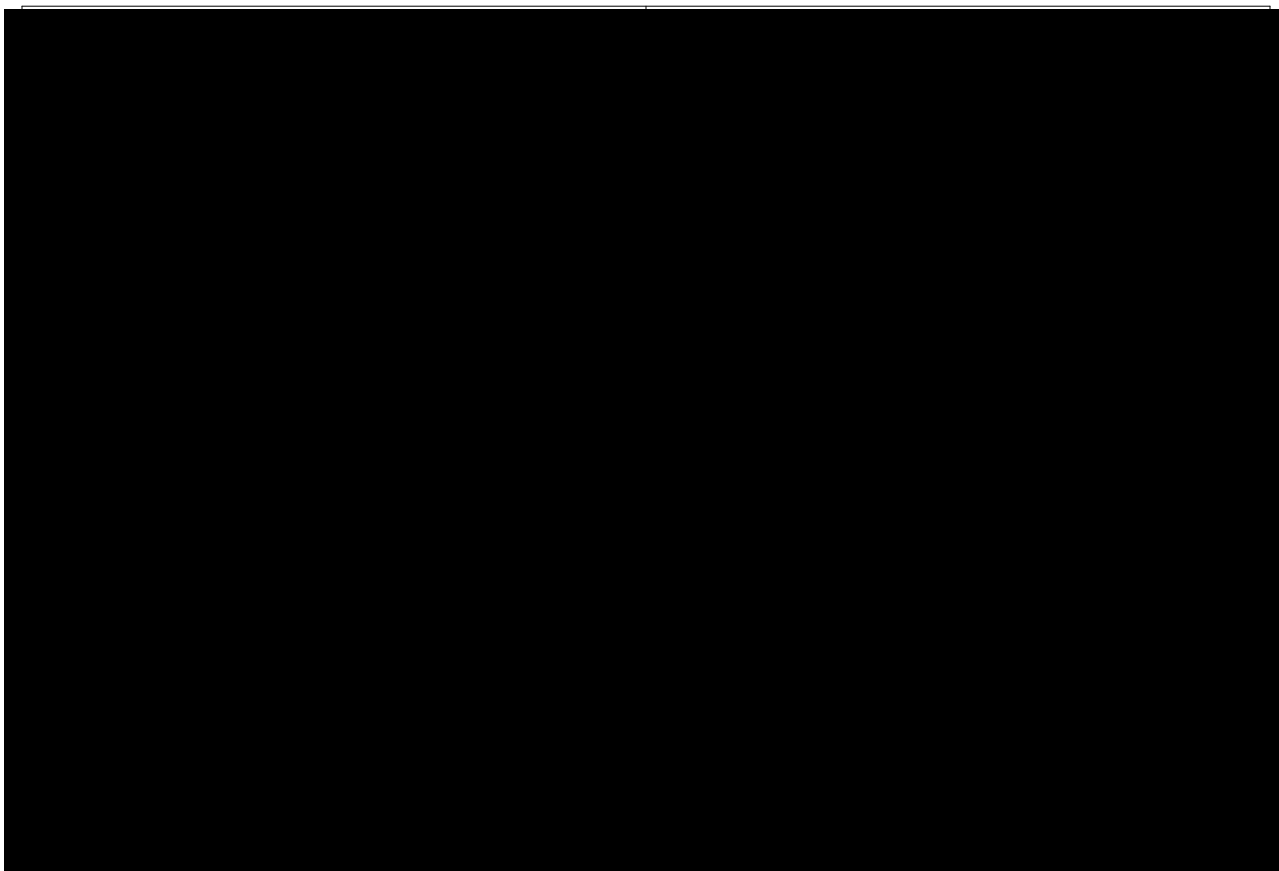
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14 (Pages 50 - 53)

1 platform in the history of computing.
2 BY MS. HURST:
3   Q   So you believe that access to the Web
4 alone would be sufficient to attract customers for
5 use of Chrome-based devices?
6   MR. RAGLAND: Objection to form and
7 outside the scope.
8   THE WITNESS: We never said that the Web
9 alone was sufficient.
10 BY MS. HURST:
11   Q   So what was the foundation for it,
12 Mr. Lin?
13   MR. RAGLAND: Same objections.
14   THE WITNESS: The foundation is for, you
15 know, all capabilities for all applications, for all
16 hardware.
17 BY MS. HURST:
18   Q   Well, let me ask you this: The hardware
19 is not really relevant to people unless they're
20 using it to do something, right?
21   MR. RAGLAND: Objection to form and
22 outside the scope.
23   THE WITNESS: Yes, that's true.
24 BY MS. HURST:
25   Q   So the foundation ultimately needs to be

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1 for people to be able to use the device in some way,
2 true?
3   MR. RAGLAND: Same objections.
4   THE WITNESS: Yes.
5 BY MS. HURST:
6   Q   And at the time you released Chrome OS,
7 you already knew how to get people to access the
8 Web, true?
9   MR. RAGLAND: Objection to form and
10 outside the scope.
11   THE WITNESS: Yes.
12 BY MS. HURST:
13   Q   So it's true, isn't it, that you built
14 this foundation, at least in part, for applications?
15   MR. RAGLAND: Objection to form, outside
16 the scope of noticed topics.
17   THE WITNESS: We built it to be able to
18 generally use the Web and to also run applications
19 and, you know, to provide a foundation for doing
20 things that we hadn't even imagined yet.
21 BY MS. HURST:
22   Q   Does the Chrome OS have a set of developer
23 APIs?
24   MR. RAGLAND: Objection to form, outside
25 the scope.

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1   THE WITNESS: Chrome OS makes use of all
2 of the Web APIs for developing applications with
3 HTML5 and JavaScript.
4 BY MS. HURST:
5   Q   Other than HTML5 and JavaScript, are there
6 any other developer-oriented APIs associated with
7 Chrome OS?
8   MR. RAGLAND: Same objections.
9   THE WITNESS: We allow people to write
10 applications in native languages like C using a
11 facility called Native Client.
12 BY MS. HURST:
13   Q   And is that Native Client associated with
14 some other platform?
15   MR. RAGLAND: Objection to form and
16 outside the scope.
17   THE WITNESS: What -- what other
18 platforms?
19 BY MS. HURST:
20   Q   Well, for example, the JNI interface as
21 part of the Java platform is a way of allowing
22 people to integrate applications written in native
23 languages.
24   Are you using --
25   A   We don't support Java on Chrome OS.

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1   MR. RAGLAND: We've been going about an
2 hour. When it's a convenient time for a break...
3   MS. HURST: Just a few moments and I'll be
4 ready.
5   MR. RAGLAND: That's fine.
6 BY MS. HURST:
7   Q   So the Native Client that you mentioned,
8 is that associated with JavaScript? What's it
9 associated with?
10   MR. RAGLAND: Objection to form and
11 outside the scope.
12   THE WITNESS: It's associated with C
13 primarily, C++.
14 BY MS. HURST:
15   Q   And is that -- is that built into
16 Chrome OS, that Native Client capability?
17   MR. RAGLAND: Same objections.
18   THE WITNESS: Yes.
19   MS. HURST: All right. This is a
20 convenient time if you'd like a break.
21   MR. RAGLAND: Thank you.
22   THE VIDEOGRAPHER: Going off the record.
23 The time is 10:57.
24   (Recess taken.)
25   THE VIDEOGRAPHER: We're back on the

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15 (Pages 54 - 57)

1 record. The time is 11:09.
2 BY MS. HURST:
3   Q   Mr. Lin, other than the Chrome browser,
4 are there any Google applications that are routinely
5 distributed with Chrome OS?
6   MR. RAGLAND: Objection; outside the
7 scope.
8   THE WITNESS: We don't actually distribute
9 them, but we provide links to things like Google
10 Docs, Google Drive and other services that are
11 helpful to end users as part of that platform.
12 BY MS. HURST:
13   Q   And when you say "links," do you mean a
14 link in a browser or a link on a home page? What
15 are you referring to?
16   A   It's an application launcher.
17   Q   And are there any non-Google services or
18 applications that are routinely distributed with the
19 Chrome OS?
20   MR. RAGLAND: Same objections.
21   THE WITNESS: Adobe Flash and various --
22 various codecs.
23 BY MS. HURST:
24   Q   Any others?
25   A   Not that come to mind immediately.

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1 trying to get Skype working. I don't know if it's
2 actually one of them. There are a few games, and I
3 believe -- what is it? It's -- there's a
4 note-taking application.
5   Q   Evernote?
6   A   Evernote. That's it. Thanks.
7   Q   Pardon me.
8   Returning to Exhibit 5003 that you have in
9 front of you, there's a -- page 7, you see a series
10 of numbered paragraphs there, 2 through 8.
11   A   Uh-huh.
12   Q   Have you seen this document before?
13   A   This is the first time I've seen this.
14   Q   Okay.
15   Topic 3 is listed as:
16   "Google Play Services,
17   including the nature, purpose and
18   operation of Google Play Services,
19   your licensing, marketing,
20   advertising or distribution thereof
21   and any cost, expenses or revenue
22   associated with Google Play
23   Services."
24   Do you see that topic?
25   A   Yes.

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1   Q   And when you say "codecs," do you mean
2 applications that assist with the use of audio or
3 video?
4   A   Yes.
5   Q   Is there any kind of a market for
6 downloading applications for Chrome OS?
7   A   We have a Chrome Web Store.
8   Q   And approximately how many non-Google
9 applications are available in the Chrome Web Store?
10   MR. RAGLAND: Objection; outside the
11 scope.
12   THE WITNESS: I think it's in the tens of
13 thousands.
14 BY MS. HURST:
15   Q   Are there any applications currently
16 marketed in the Chrome Web Store that are usable
17 with Chrome OS because of ARC Welder?
18   MR. RAGLAND: Objection to form and
19 outside the scope.
20   THE WITNESS: Yes.
21 BY MS. HURST:
22   Q   Can you give me some examples?
23   A   I think -- I don't have the specific
24 examples. There are -- there are about a dozen. I
25 haven't used them recently. I know we've been

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1   Q   And is it your understanding that you are
2 proffered here by Google to testify today on some
3 portion of Topic 3?
4   A   Yes.
5   Q   And -- and using your own words, what's
6 your understanding of that aspect of Topic 3 that
7 you're to cover?
8   A   Just exactly what it says here: The
9 purpose and operation of Google Play Services for
10 what it is and how it's used.
11   Q   All right.
12   MR. RAGLAND: Actually, if I could refer
13 back to the discussions we've had among counsel as
14 to the scope of Topic 3, we're presenting Mr. Lin on
15 the aspect of Topic 3 related to licensing,
16 marketing, advertising or distribution of Google
17 Play Services.
18 BY MS. HURST:
19   Q   All right.
20   Did you hear that proffer by your counsel,
21 Mr. Lin?
22   A   I did.
23   Q   And do you consent to testify here today
24 on behalf of Google, Inc. regarding the licensing,
25 marketing, advertising or distribution of Google

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16 (Pages 58 - 61)

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1 Play Services?
2   A   Yes.
3   MS. HURST: Do you want to make a similar
4 proffer with respect to Topic 4, Mr. Ragland?
5   MR. RAGLAND: No.
6   MS. HURST: So it's all of Topic 4,
7 correct?
8   MR. RAGLAND: All of Topic 4. There is a
9 limitation on Topic 5. We can get to that whenever
10 you like.
11   MS. HURST: All right.
12 BY MS. HURST:
13   Q   So, Mr. Lin, you heard Mr. Ragland state
14 that you're being offered to testify on all of
15 Topic 4, true?
16   A   Uh-huh.
17   Q   Yes?
18   A   Yes.
19 BY MS. HURST:
20   Q   Thanks.
21   And do you consent to testify on Topic 4
22 on behalf of Google?
23   A   Yes.
24   MS. HURST: All right. Mr. Ragland, do
25 you want to make your designation with respect to

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1 Topic 5?
2   MR. RAGLAND: Sure. As to Topic Number 5,
3 Mr. Lin is designated to testify as to mobile
4 agreements with OEMs or carriers regarding Google
5 services on non-Android devices. And by "Google
6 services," that's defined as Google Mobile Services
7 and Google Play Services.
8   MS. HURST: Well, I'm not sure that's how
9 we defined it. I think it was broader than that,
10 but that's all right. I think we understood the
11 designation on Topic 5 to be broader than that based
12 on the prior correspondence. I'm not sure there's
13 much we can do about that right now.
14 BY MS. HURST:
15   Q   You've heard, Mr. Lin, your counsel's
16 proffer as to your designation on Topic 5?
17   A   Yes.
18   Q   And do you consent to testify on behalf of
19 Google with respect to Topic 5 as identified by your
20 counsel?
21   A   Yes.
22   Q   Did you do anything specific to prepare to
23 testify here today? Not just your ordinary course
24 of duties on behalf of Google, but specific to
25 preparing to testify on any of Topics 3, 4 or 5?

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1   A   Just had some conversations with our
2 lawyers.
3   Q   And when did those conversations occur and
4 approximately how long did they last?
5   A   It was a few hours on Thursday.
6   Q   Did you undertake any other efforts to
7 prepare specifically to testify on Topics 3, 4 or 5?
8   A   I took a quick look at a couple of
9 agreements that they showed me.
10   Q   And were those agreements that you were
11 already familiar with?
12   A   Yes.
13   Q   And did they refresh your recollection in
14 any way when you looked at those agreements in order
15 to prepare yourself?
16   A   Yes.
17   Q   Which agreements were they?

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Page 67

3 BY MS. HURST:
4   Q   Is it true also, though, that the device
5 manufacturers like to compete with one another to
6 get consumers to buy their phones?
7   MR. RAGLAND: Objection -- give me a
8 second to make objections.
9   Objection to form and outside the scope of
10 noticed topics.
11   THE WITNESS: What was the question again?
12 BY MS. HURST:
13   Q   The device manufacturers like to compete
14 with one another to get consumers to buy their
15 phones?
16   A   Yes.
17   Q   And that's true even if they're using --
18 both using the Android platform. For example,
19 Samsung and HTC both want to compete and try to get
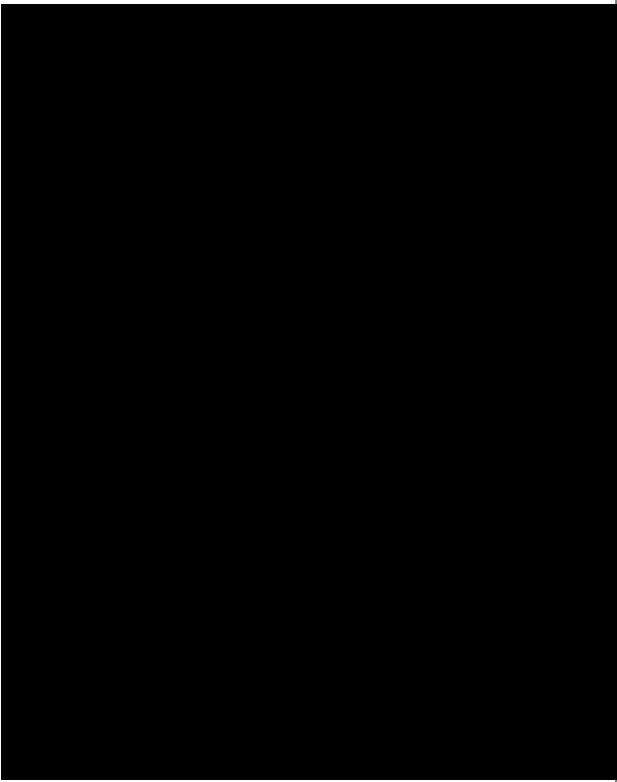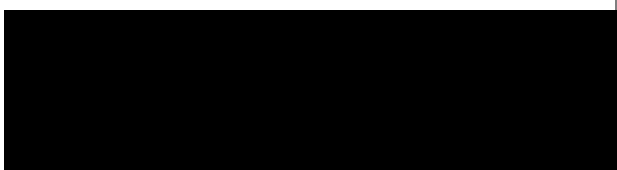20 users to buy their phone?
21   MR. RAGLAND: Objection to form, outside
22 the scope.
23   THE WITNESS: Well, I think they --
24 there's areas where they compete and there's areas
25 they don't want to compete. I think they don't want

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18 (Pages 66 - 69)

1 to compete in the areas where, you know,
2 applications don't run consistently. They do
3 compete in terms of providing hardware features that
4 are sometimes unique, better or faster.
5 BY MS. HURST:
6   Q   Which might result in improved application
7 performance, true?
8   MR. RAGLAND: Objection; form and outside
9 the scope.
10   THE WITNESS: Sometimes the choices they
11 make actually diminish application performance.
12 Some people offer full-disk encryption as a way to
13 provide enhanced security at the cost of application
14 performance.
15 BY MS. HURST:
16   Q   Can you approximate the current market
17 share of active Android devices by manufacturer?
18   MR. RAGLAND: Objection; outside the
19 scope.
20   THE WITNESS: I -- I'm sure we have the
21 data somewhere. I don't have -- I don't have it,
22 off the top of my head.
23 BY MS. HURST:
24   Q   Is it your understanding that Samsung has
25 most significant market share among Android OEM

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1 handset manufacturers?
2   MR. RAGLAND: Same objection.
3   THE WITNESS: Yes.
4 BY MS. HURST:
5   Q   And can you approximate a range of
6 share -- market share that you attribute to Samsung
7 Android devices?
8   MR. RAGLAND: Objection to form and
9 outside the scope.
10   THE WITNESS: I couldn't say.
11 BY MS. HURST:
12   Q   Is it more than half of the market?
13   MR. RAGLAND: Same objections.
14   THE WITNESS: I don't have the data. I
15 haven't looked at it.
16 BY MS. HURST:
17   Q   As a dominant player in the market, isn't
18 it true that Samsung would care less about
19 compatibility and would be perfectly happy to try to
20 lock people into its version of Android?
21   MR. RAGLAND: Objection to form and
22 outside the scope of noticed topics.
23   THE WITNESS: I mean, it's not -- I don't
24 know what Samsung's strategy is. If you're asking
25 for my opinion, I can offer it, but I don't know

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1 what their strategy is.
2 BY MS. HURST:

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6 that was just a generic Apache Version 2 license?
7   A   Yes.
8   Q   What is Google Mobile Services?
9   A   Google Mobile Services is a bundle of
10 Google's first-party mobile applications.
11   Q   What is Google Play Services?
12   A   Google Play Services is a set of
13 applications that don't have a specific user
14 interface, but they provide core application
15 functionality.
16   Q   Is Google Mobile Services for Android or
17 non-Android operating systems or both?
18   MR. RAGLAND: Objection to form.
19   You can answer.
20   THE WITNESS: So Google Mobile Services
21 includes the first-party apps on Android. Google
22 Mobile Services include the first-party applications
23 that most people are familiar with, which include
24 things like Gmail, Chrome, YouTube. And for iOS,
25 that's what people think of when they think of

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19 (Pages 70 - 73)

1 Google Mobile Services.
2   On Android, in addition to the
3 applications I described, there's also the Google
4 Play Store, which is where applications can be
5 downloaded, and Play Services are the application
6 services that on Android enable things like Play
7 Services to operate. So it's services like
8 authentication and, you know, all of the additional
9 services required to keep track of, you know,
10 in-application payments, things like that.
11   So I think of them as -- refer to them as
12 headless applications because they don't actually
13 have a interface that users typically interoperate
14 with.
15 BY MS. HURST:
16   Q   Similar to the codecs you mentioned for
17 Chrome OS, for example?
18   A   That's right. That's right.
19   Q   Now, these headless applications in Google
20 Play Services, did any of that functionality -- has
21 any of that functionality ever been provided as part
22 of the Android platform?
23   MR. RAGLAND: Objection; outside the scope
24 and form.
25   THE WITNESS: I do not believe so.

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1 automatically included as part of that?
2   A   That's right.
3   Q   So why not include these headless
4 applications in the Android platform itself?
5   MR. RAGLAND: Objection to form, outside
6 the scope of noticed topics.
7   THE WITNESS: In the absence of Google's
8 first-party applications and the Play Store, they're
9 not relevant.
10 BY MS. HURST:
11   Q   Well, in-application payments is something
12 that certainly could be done without a Google
13 application, true?
14   MR. RAGLAND: Objection to form, outside
15 the scope.
16   THE WITNESS: There are so many ways to
17 implement the in-app payments that without the
18 specific rest of the solution, I'm not sure it would
19 be relevant.
20 BY MS. HURST:
21   Q   Relevant to what?
22   A   To Android.
23   Q   Well, does Android, for example, support
24 payment processing in connection with Near Field
25 Communications?

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1 BY MS. HURST:
2   Q   Prior to -- well, how long has Google Play
3 Services been around?
4   A   I don't actually know.
5   Q   Was Google Play Services available at
6 the -- at the initial launch of Android?
7   A   I don't think so.
8   Q   It came about later, true?
9   A   That's correct.

19   Q   When you say "the bundle," what are you
20 referring to?
21   A   The Google mobile applications, so it
22 would be the set of applications, Mail, YouTube,
23 Chrome, Google Hangouts, Google Photos, Google Docs
24 and Drive, Play Music.
25   Q   So the Google Play Services are

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1   MR. RAGLAND: Objection; outside the
2 scope, also form.
3   THE WITNESS: I don't think Android
4 provides those facilities directly in any of the
5 major releases of Android. However, I believe that
6 phone manufacturers and other third parties have the
7 ability to add those capabilities to their specific
8 implementations.
9 BY MS. HURST:
10   Q   Does Google Wallet work with Near Field
11 Communications?
12   MR. RAGLAND: Same objections.
13   THE WITNESS: Google Wallet requires NFC,
14 Near Field Communications. The -- yes.
15 BY MS. HURST:
16   Q   And is Google Wallet a first-party Google
17 application?
18   A   I'd have to double check. I don't think
19 Google Wallet is part of GMS today.
20   Q   Is Google Wallet compatible with the
21 Android platform?
22   MR. RAGLAND: Objection to form, outside
23 the scope.
24   THE WITNESS: Google Wallet is compatible
25 with Android.

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20 (Pages 74 - 77)

1 BY MS. HURST:
2   Q When you said that third parties have the
3 ability to add Near Field Communication capabilities
4 to their specific implementations, did you mean they
5 have the ability to use Google Wallet or some --
6 something else?
7   A So with every release of Android, we have
8 a compatibility definition document which stipulates
9 the minimum set of functionality and features that
10 we expect to be part of the platform. Beyond that,
11 hardware manufacturers can really implement and add
12 any features and functionality that they would like
13 to add.
14   So depending on what version of Android
15 you're talking about, you know, we constantly add
16 new features, and in newer releases, that additional
17 functionality, then, becomes part of the
18 compatability requirement.
19   So in earlier releases, there may be some
20 things that we didn't require, and later releases,
21 we've added more of those. But at any point in
22 time, the hardware manufacturers can add things that
23 are not part of the general platform.
24   So, for example, Samsung today has Samsung
25 Pay, which uses some patented technology that they

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1 have, which is not NFC based and allows the Samsung
2 hardware to actually work with magnetic stripe
3 readers. So it's an alternate payment solution, and
4 that's not part of the standard Android platform.
5   Q It's also not part of Google Play
6 Services, as you've described it, true?
7   A Samsung play -- Samsung Pay is not part of
8 Google Play Services.
9   Q Is there any technical reason why
10 everything in Google Play Services could not be
11 included as part of the basic Android platform?
12   MR. RAGLAND: Objection to form and
13 outside the scope of noticed topics.
14   THE WITNESS: Well, Google Play Services
15 are proprietary, just like Google first-party apps,
16 like Gmail, YouTube. So there's no reason why
17 Google would necessarily want to make it open
18 source, and even if we did, you know, other -- other
19 third parties might look for ways to do things
20 differently.
21 BY MS. HURST:
22   Q There's nothing about your licensing
23 scheme that prohibits third parties from looking for
24 ways to do things differently so long as they
25 maintain compatability, true?

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1   MR. RAGLAND: Objection to form, also
2 outside the scope.
3   THE WITNESS: Can you -- can you ask the
4 question again?
5 BY MS. HURST:
6   Q There's nothing about your licensing
7 scheme that prohibits third parties for looking for
8 ways to do things differently so long as they
9 maintain compatability?
10   MR. RAGLAND: Same objections.
11   THE WITNESS: Well, the -- the -- I mean,
12 the purpose of the license is to restrict
13 distribution to the specific terms of the agreement.
14 We're not -- we're not contemplating all the other
15 possibilities. Because it's licensed software, we
16 use the MADA to license these third parties to
17 distribute the software.
18 BY MS. HURST:
19   Q Can third parties get Google Play Services
20 without entering into an agreement to distribute
21 Google Mobile Services?
22   A No. Google Play Services is part of GMS,
23 so it's only licensed today with the MADA.
24   Q And has that always been the case?
25   A To my knowledge, that's always been the

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1 case.
2   Q Is it true that headless applications
3 generally are not visible to the end user?
4   MR. RAGLAND: Objection to form.
5   THE WITNESS: Users don't have a direct
6 interface like they do with Gmail. However, we're
7 not -- we don't hide them from the user, so if a
8 user is interested in seeing what programs are
9 running on their Android device, they'll see it.
10 BY MS. HURST:
11   Q But -- but users generally don't instruct,
12 directly or otherwise -- interact directly with
13 headless applications, true?
14   MR. RAGLAND: Objection to form and scope.
15   THE WITNESS: I think it's a matter of how
16 you would describe it. I mean, part of -- for
17 example, the -- one of the services, authentication
18 services, the user is signing in or they're signed
19 in to Android, and we're keeping track of that.
20   Does that mean that they are trying to
21 engage with the log-in? I mean, in some ways it's
22 happening, you know, behind the scenes for them.
23 They are actively engaged with it, but not in those
24 same way that they might think of when they're
25 talking about composing e-mail or reading e-mail.

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21 (Pages 78 - 81)

1 BY MS. HURST:
2   Q   What does the application -- pardon me, I
3 misspoke. Strike that.
4   What does the authentication functionality
5 of Google Play Services provide?
6   A   It ensures that the person we think is
7 signed in and going to purchase something is
8 actually the person who is that account owner.
9   Q   And is there any reason why you would not
10 want that to be true for every single device running
11 the Android platform?
12   MR. RAGLAND: Objection to form and
13 outside the scope of noticed topic.
14   THE WITNESS: It's -- it's not strictly up
15 to us to decide that there should be only one
16 authentication mechanism for all devices and that we
17 should have access to all that information.
18 BY MS. HURST:
19   Q   Is there authentication capability built
20 into the Android platform, apart from that in GPS?
21   MR. RAGLAND: Same objections.
22   THE WITNESS: What's -- what's GPS?
23 BY MS. HURST:
24   Q   Google Play Services.
25   A   Oh. Different manufacturers of devices,

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1 in addition to using Google accounts to operate all
2 the Google Mobile Services, also create their own
3 accounts so that they can sell content, services and
4 applications, and carriers also create accounts on
5 phones, and they have their own authentication
6 mechanism to doing so.
7   So it's not clear that single
8 authentication mechanism is either, A, what the
9 users would want, B, what the developers -- content
10 developers or application creators would want and,
11 C, it's unclear that you could have a single
12 authentication mechanism that would satisfy the
13 requirements of folks like the carriers.
14   MS. HURST: All right. Let me try this
15 again. I'm going to move to strike that as
16 nonresponsive.
17 BY MS. HURST:
18   Q   Is there authentication capability built
19 into the Android platform apart from that of Google
20 Play Services?
21   MR. RAGLAND: Objection to form and beyond
22 the scope of noticed topics.
23   THE WITNESS: So what I would say is every
24 device is different, and I can tell you that there
25 are devices that have more than just Google Play

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1 Services.
2 BY MS. HURST:
3   Q   But that would not be part of the Android
4 platform, true?
5   MR. RAGLAND: Same objections.
6   THE WITNESS: It's part of -- well, it's
7 part of their Android solution.
8 BY MS. HURST:
9   Q   Is that the Android platform?
10   A   How are you defining "the Android
11 platform"?
12   Q   Well, the Android platform is the thing
13 that Google provides, right?
14   MR. RAGLAND: Objection to form.
15   THE WITNESS: The Android platform -- if
16 you're talking -- if what you mean is the Android
17 open source release, the Android open source release
18 I do not believe has any authentication built in,
19 and it's only what third-party manufacturers add to
20 the open source release that actually provides that.
21   So -- again, so I'm not sure what you mean
22 by "platform." Android open source platform, from
23 that standpoint, doesn't actually exist in that form
24 on any device. There's nobody that ships that
25 particular release of software in that way. They

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1 always add to it.
2 BY MS. HURST:
3   Q   Has that always been the case?
4   A   Yes. I can't think of anybody -- like I
5 said, I can't think of anybody who just ships a
6 phone with only Android open source and nothing
7 else.
8   MS. HURST: Mr. Ragland, more than 100
9 agreements related to these topics were produced on
10 Friday and more than a thousand documents from this
11 witness' custody were produced on Saturday night at
12 11:00 p.m. We have not yet had the opportunity to
13 load and process those documents for use in
14 connection with this deposition.
15   It is, therefore, my proposal to you that
16 we conduct about half of this deposition today and
17 that we adjourn the other half to a date when we
18 have had an opportunity to review those and any
19 other documents that are forthcoming associated with
20 these topics and from the custody of this witness.
21   The reason I'm raising this with you now
22 is because I need your agreement that you're not
23 going to assert either the cutoff or the seven-hour
24 limit in light of our decision to proceed today with
25 the late production of documents.

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22 (Pages 82 - 85)

1   And if we can't come to an agreement on
2 that, then it's my intention to attempt to contact
3 Magistrate Judge Ryu to assist in resolution of the
4 matter, given the late production of documents. I
5 don't think enormous recriminations are necessary.
6 We're prepared to engage in them if required, but
7 I'm trying to propose a reasonable solution rather
8 than that approach. So...
9   MR. RAGLAND: Well, why don't we -- it's
10 about noon. I don't know when you're planning to
11 take a lunch break, but I agree it's not helpful to
12 get into a back and forth on the transcript here.
13 Why don't we discuss it after a break.
14   MS. HURST: Okay. The only thing I would
15 say to that is I would like -- if we're going to
16 need the magistrate's assistance, to try to contact
17 her chambers at the lunch break in order to see if
18 she's available this afternoon.
19   Would it be reasonable to take a short
20 break now, allow you all to confer amongst
21 yourselves and with your colleagues and then come
22 back and see whether you think we're going to be
23 amenable to some agreement on that so that I know
24 whether to contact the magistrate over the lunch
25 hour?

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1   MR. RAGLAND: That's fine. Obviously,
2 there's a number of questions that spring to my mind
3 with regard to, you know, situations of witnesses
4 that we may have had late production of documents
5 given that we're all rushing to get things out, but
6 we can talk about those details. Maybe we can come
7 back from a break.
8   MS. HURST: All right. Well, so -- I
9 mean, you can try to turn this into a global
10 stipulation. I don't know that that's going to be
11 successful, and I hope we won't go down that road,
12 because it's my understanding that almost without
13 exception, we produced the documents from the
14 custody of each witness who's been deposed at least
15 six days in advance of that deposition. That was
16 not true here.
17   MR. RAGLAND: I don't believe that's
18 accurate. But, again, I don't necessarily want to
19 spend time arguing about this right now.
20   Why don't we take a short break, 10
21 minutes or so, and come back and we'll have each
22 other's position.
23   MS. HURST: All right. Thank you.
24   THE VIDEOGRAPHER: Going off the record.
25 The time is 11:52.

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1   (Recess taken.)
2   THE VIDEOGRAPHER: We're back on the
3 record. The time is 12:14.
4   MR. RAGLAND: Okay. So here's our
5 position: This is the first we've heard of any
6 complaint about production of custodial documents
7 related to Mr. Lin. We're all working on producing
8 documents as fast as we can, given the truncated
9 discovery period.
10   One thing that's frustrated our production
11 is, in fact, Oracle's ever-shifting demands on items
12 like ESI terms and -- which still we haven't closed
13 out, despite more than a month of meeting and
14 conferring on, and we think we have a deal, but we
15 still haven't heard back since at least last
16 Thursday, I believe. And so it's a moving target.
17 Also with pre-2011 production, there are issues.
18   And so we're working through all of that
19 as quickly as we can. The volume associated with
20 Mr. Lin, although I don't have the exact numbers on
21 hand -- perhaps you do -- I know it's much smaller
22 than with many other witnesses. And so we're
23 basically all doing what we can to prepare for the
24 depos as much as we can.
25   You can choose to proceed today. Mr. Lin

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1 is here, he's available for both 30(b)(6) and
2 percipient testimony for seven hours, and that's
3 where we are.
4   MS. HURST: So you're refusing to agree
5 either to hold open the deposition to a date past
6 the cutoff or to agree to waive the seven-hour
7 requirement in light of the late production?
8   MR. RAGLAND: Well, I would take issue
9 with the characterization of a late production. And
10 we're not making agreement with that. I did ask
11 whether or not there's any reciprocity here because
12 obviously Oracle is producing documents, large
13 volumes of documents, very close to depositions of
14 witnesses. But you don't want to talk about that,
15 so if we're just here talking about Mr. Lin, he's
16 here. You should depose him, and we're not -- we've
17 got other depositions coming up that we're all
18 working to cover and, you know, you should proceed.
19   MS. HURST: Okay. Let me ask you a couple
20 of questions, Mr. Ragland. For production, we
21 received Saturday night at 11:00 p.m. When exactly
22 do you think we should have raised it between then
23 and now?
24   MR. RAGLAND: You can raise issues.
25 You've had no shyness about raising issues whenever

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23 (Pages 86 - 89)

1 you think there's problems. So you could have
2 raised them.
3   MS. HURST: On Sunday at 2:00 p.m.?
4 Sunday at 4:00 p.m.? Exactly when, Mr. Ragland?
5   MR. RAGLAND: Okay. The sort of snide
6 tone is not appreciated. I will say --
7   MS. HURST: It's also not appreciated --
8   MR. RAGLAND: Excuse me. Excuse me. I
9 will say that for witnesses for whom I'm
10 responsible, I looked in advance to find out whether
11 or not the documents I think that are necessary to
12 prepare to take that deposition are available. If I
13 had any questions, I would have raised that. So
14 whenever you start preparing, if you thought, oh,
15 there may be documents that haven't been produced
16 that are necessary for my preparation, that's the
17 time I would have reached out.
18   MS. HURST: All right. Judge Alsup's
19 order says:
20   "If documents are produced in
21   a time frame that cannot be used
22   for a deposition, the deposition
23   can be reopened."
24   It already says that in Judge Alsup's Case
25 Management Order.

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1 11:03 p.m., then I am going to seek relief from the
2 magistrate judge. So it's up to you whether you
3 want to reach a stipulation about this witness.
4 We'll certainly happily meet and confer about any
5 problems you identify on our side, specifically the
6 people responsible for those witnesses will deal
7 with it. We're here now with this witness.
8   MR. RAGLAND: Well, initially a thousand
9 documents is actually a very small volume given
10 the -- given the case and given the production
11 demands of lots of irrelevant information that
12 Oracle has made.
13   That aside --
14   MS. HURST: Are you representing that the
15 documents you produced on Saturday night were
16 responsive only to our keywords and not to any of
17 yours; is that your representation?
18   MR. RAGLAND: I'm not making
19 representations about what was and was not produced
20 on Saturday.
21   MS. HURST: Then please refrain from
22 asserting that somehow those documents were produced
23 out of the goodness of your heart for us.
24   MR. RAGLAND: Usually meeting and
25 conferring involves an actual attempt to meet and

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1   You produced more than a thousand
2 documents from this witness on Saturday night at
3 11:03 p.m. Our -- our document vendor hasn't even
4 been able to load those documents into our
5 relativity database yet.
6   You'll appreciate, Mr. Ragland, that I
7 don't usually take opposing counsel's word for it as
8 to whether I need documents to complete a deposition
9 or not. And the bind that you've put us in is that
10 I don't know what's in there, and if I go seven
11 hours with this witness today, you'll take the
12 position that I can't continue later. That is a
13 bind that is entirely of your making.
14   You have -- in terms of reciprocity, you
15 haven't identified any witness by name for whom this
16 is a problem for your side. And if you do, the
17 people responsible for that witness will be more
18 than happy to meet and confer about it and reach
19 agreements that are appropriate in light of the
20 circumstances. We're here right now with respect to
21 this witness.
22   So if you're not going to agree to provide
23 us with some relief from the fact that you produced
24 a huge volume of documents relevant to this
25 deposition on Friday at 7:14 p.m. and Saturday at

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1 confer rather than accusations with a tone of voice
2 that is completely improper.
3   MS. HURST: I made a very specific
4 proposal about how to resolve this. I gave you two
5 options; those have been on the table since the
6 beginning. You came in and just completely rejected
7 all of that. So don't tell me about whether meet
8 and confers can be constructive or not when you're
9 not putting anything on the table designed to
10 resolve the situation.
11   MR. RAGLAND: My question was actually
12 going to be -- if you would stop for a second and
13 actually listen to what I'm saying rather than just
14 trying to fight, is: What exactly are you
15 proposing? Are you proposing reserving a set amount
16 of time with regards to those Saturday -- those
17 thousand documents from Saturday? Is that what
18 you're suggesting, or are you suggesting something
19 else? Because I've heard that you want to go seven
20 hours today and then have more time later. So what
21 exactly are you proposing?
22   MS. HURST: Here is what I said before the
23 break: "My proposal to you is that we conduct about
24 half of this deposition today and that we adjourn
25 the other half to a date when we have had an

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24 (Pages 90 - 93)

1 opportunity to review the recently" -- pardon me. I
2 said "those and any other documents that are
3 forthcoming associated with these topics and from
4 the custody of this witness."
5   I'm not going to limit the later
6 examination to things produced on Saturday night
7 because the Friday production is also unusable to
8 us, so -- and I don't know what else might still be
9 coming for this witness.
10   So my proposal was three and a half hours
11 today and another three and a half hours that we
12 adjourn to a mutually-convenient time when we've had
13 a chance to review the documents that have just been
14 produced and any more that are forthcoming.
15   MR. RAGLAND: What later point of time are
16 you proposing?
17   MS. HURST: Is there more forthcoming for
18 this witness and for these topics?
19   MR. RAGLAND: My understanding -- and I
20 can check -- is that everything has been produced
21 with relation to -- to Mr. Lin. I can check on
22 that, but that's my understanding.
23   MS. HURST: What date do you propose?
24   MR. RAGLAND: Well, you're making the
25 proposal. I don't know. Are you talking --

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1 loaded yet.
2   MR. RAGLAND: So practically it would
3 be -- I don't know Mr. Lin's availability right now
4 because I don't know the time frame you're asking.
5 Practically you're suggesting it would be Thursday
6 or Friday of this week?
7   MS. HURST: Or early next week.
8   MR. RAGLAND: Or early next week?
9   MS. HURST: Yes, that's what I'm
10 suggesting.
11   MR. RAGLAND: Well, I -- I do want to find
12 out what the -- do you have the volume for the
13 Friday production?
14   MS. HURST: What I have is 1500 pages --
15 1500-plus pages, which included more than 100
16 agreements that are relevant to Topics 3, 4 and 5.
17   MR. RAGLAND: Okay. So apparently about
18 100 documents comprised about 1500 pages?
19   MS. HURST: Right. There may be other
20 things in that 1500 pages. I don't know. I'm
21 telling you what information I have. Obviously we
22 haven't fully reviewed every single thing yet.
23   MR. RAGLAND: I understand.
24   So I need to -- shall we take a lunch
25 break, a brief one?

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1   MS. HURST: Well, I don't know when the
2 witness is available, Mr. Ragland. I wouldn't
3 presume -- usually under local Rule 30 whatever,
4 whatever, the way we do this is the party who's
5 presenting a witness proposes the dates, not the
6 other way around.
7   MR. RAGLAND: What I mean -- and, again,
8 if you would let -- if you would actually have a
9 discussion rather than just looking for
10 opportunities to pounce, I'm asking, do you, in your
11 mind, mean next week? Do you mean January? Do you
12 mean February?
13   What sort of thing -- are you talking
14 about Wednesday? What sort of thing are you talking
15 about?
16   MS. HURST: Well, no. Well, before -- in
17 sufficient time to be used for the first round of
18 expert reports that are due on January 8th, so I
19 would think that that would mean sometime before the
20 Christmas holiday.
21   I don't know, you know, whether we have
22 the documents from Saturday night loaded, or I would
23 be more specific and give you -- say to you, you
24 know, in the next couple of days. I don't think I
25 can do that because we don't have the documents

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1   MS. HURST: Sure.
2   MR. RAGLAND: And then we can hopefully
3 figure out where we are after that. I mean, we can
4 do a half hour lunch.
5   MS. HURST: Well, that might be -- is that
6 okay with the reporter?
7   THE REPORTER: (Nods head.)
8   MS. HURST: Okay. I don't know if I can
9 get somewhere and back in half an hour, but I'll do
10 my best.
11   MR. RAGLAND: If you need longer, that's
12 fine as well.
13   MS. HURST: Well, let's call it half an
14 hour and if I'm, you know -- then we'll see where we
15 are.
16   MR. RAGLAND: Okay.
17   MS. HURST: Thank you.
18   THE VIDEOGRAPHER: Going off the record.
19 The time is 12:25.
20   (Lunch recess taken.)
21   THE VIDEOGRAPHER: This marks the
22 beginning of DVD Number 2 in the deposition of Felix
23 Lin. Going back on the record. The time is 1:19.
24   MS. HURST: All right. The parties -- we
25 have resolved our dispute regarding this deposition

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25 (Pages 94 - 97)

1 and our agreement is as follows: Mr. Ragland,
2 correct me if I state it wrong. We will go four
3 hours on the record today, give or take, we will
4 go -- we will conclude the deposition on Friday
5 morning from 8:00 to 11:00 a.m. at your offices in
6 San Francisco. Google will not assert the discovery
7 cutoff in the meantime as a reason for not
8 completing the deposition on Friday morning, and I
9 think that's probably all we need to say.
10   But if you want to add anything --
11   MR. RAGLAND: Yeah, I think that's right.
12 And I understand that both -- both sides have a hard
13 stop at 11:00 a.m. on Friday morning.
14   MS. HURST: Agreed.
15   MR. RAGLAND: At our offices, 633 Battery
16 Street.
17   MS. HURST: All right. Thank you for your
18 courtesy and finding a mutually convenient date to
19 resolve the issue. Appreciate it.
20 BY MS. HURST:
21   Q   Thank you, Mr. Lin, for agreeing to come
22 to San Francisco.
23   A   No problem. Happy to do it. That's fine.
24   Q   Mr. Lin, did you have any role in
25 connection with a device called the Pixel C?

1   A   They both ran Chrome OS.
2   Q   Does the Pixel C run Chrome OS?
3   A   It does not today.
4   Q   Was it ever during development
5 contemplated that the Pixel C would be a Chrome OS
6 device?
7   MR. RAGLAND: Objection to form and beyond
8 the scope.
9   THE WITNESS: That was one of the options
10 that was considered.
11 BY MS. HURST:
12   Q   Exhibit 5089 is an article dated
13 December 10, 2015, By Ron Amadeo in Ars Technica
14 entitled "The Pixel C was Probably Never Supposed to
15 Run Android."
16   (Deposition Exhibit 5089 marked
17   for identification.)
18 BY MS. HURST:
19   Q   Mr. Lin, have you seen this article?
20   A   Uh-huh, I did.
21   Q   When it came out?
22   A   Yes.
23   Q   And you read it?
24   A   I did.
25   Q   And the article proposes that the Pixel C

1   MR. RAGLAND: Objection; beyond the scope.
2   THE WITNESS: I did not.
3 BY MS. HURST:
4   Q   Are you familiar with that device?
5   A   Yes.
6   Q   What is it?
7   MR. RAGLAND: Same objection. Beyond the
8 scope of noticed topics.
9   THE WITNESS: It's a tablet with a
10 keyboard.
11 BY MS. HURST:
12   Q   Prior to the Pixel C, were there other
13 Google-related products with the -- under the brand
14 Pixel?
15   MR. RAGLAND: Objection; beyond the scope.
16   THE WITNESS: Yes.
17 BY MS. HURST:
18   Q   And what were those?
19   A   There was the original Pixel, which was a
20 laptop computer, and then there was a Pixel which
21 followed that laptop.
22   Q   Also a laptop?
23   A   Also a laptop.
24   Q   And did those prior Google Pixel laptops,
25 what operating system did they have?

1 had originally been slated to be a device that would
2 use the Chrome operating system; is that correct?
3   MR. RAGLAND: Objection; form and beyond
4 the scope.
5   THE WITNESS: It was one of the platforms
6 that was considered.
7 BY MS. HURST:
8   Q   Was it the first platform considered?
9   MR. RAGLAND: Same objections.
10   THE WITNESS: I -- I don't know that
11 there -- I don't know what the first one was. It
12 was one of the options.
13 BY MS. HURST:
14   Q   During what period of time did you
15 consider using the Chrome OS for the Pixel C device?
16   MR. RAGLAND: Objection; beyond the scope
17 and form.
18   THE WITNESS: I -- I don't know the exact
19 date, but I think Chrome OS is -- has always been
20 considered.
21 BY MS. HURST:
22   Q   When was the Pixel C released?
23   A   Just recently. I think it just went on
24 sale.
25   Q   Within the last week or so?

26 (Pages 98 - 101)

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1   A   I think so, yeah.
2   Q   Was there ever a time when you considered
3 having both the Chrome OS and Android operating
4 systems on the Pixel C?
5   MR. RAGLAND: Objection; beyond the scope.
6   THE WITNESS: Are you asking in terms of
7 having them running at the same time, or are you
8 asking did we ever consider one or both or others?
9 BY MS. HURST:
10   Q   Well, I'm asking whether --
11   When I asked whether you considered having
12 them both on there, I was thinking of something like
13 dual boot profiles, but really my question is: Did
14 you ever consider shipping the Pixel C with both,
15 you know, Android and Chrome runtimes on them?
16   MR. RAGLAND: Same objections.
17   THE WITNESS: No. We don't -- we don't
18 think dual boot is a good user experience, no.
19 BY MS. HURST:
20   Q   Did you ever consider shipping the Pixel C
21 with a Chrome OS ARC Welder and the Android runtime?
22   MR. RAGLAND: Objection; beyond the scope.
23   THE WITNESS: Honestly, I wasn't involved
24 in the decisions, but I imagine that that was
25 certainly one of the potential options.

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1 BY MS. HURST:
2   Q   So who -- you're --
3   You're one of the people responsible for
4 Chrome, true?
5   A   Right.
6   Q   And you deal with hardware manufacturers;
7 that's one of your duties?
8   A   Right.
9   Q   So was it someone who reports to you who
10 was responsible for the Pixel C?
11   A   We have a different hardware group that
12 works on our internal Google hardware. Since I work
13 primarily with partners, I'm not as exposed to any
14 of the stuff that we do internally.
15   Q   All right.
16   And -- and so just to be clear about the
17 distinction, the Pixel C, like the Nexus devices, is
18 hardware that is sold directly by Google?
19   A   That's correct.
20   Q   And who runs that hardware group that you
21 mentioned within Google?
22   A   The person that is the lead products
23 person on that is Andrew Bowers.
24   Q   And to whom does Mr. Bowers report?
25   A   I believe -- I'm not certain. I believe

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1 he reports to Hiroshi.
2   Q   Mr. Lockheimer?
3   A   Yeah.
4   Q   And do you also report to Mr. Lockheimer?
5   A   I do.
6   Q   So you and Mr. Bowers are approximately
7 peers within the organization?
8   A   Yes. Uh-huh.
9   Q   Did you ever have any discussions with
10 Mr. Bowers where you, you know, tried to convince
11 him, you know, let's ship the Pixel C with
12 Chrome OS?
13   MR. RAGLAND: Objection to form and beyond
14 the scope.
15   THE WITNESS: I've never had that
16 conversation with him.
17 BY MS. HURST:
18   Q   Did anybody working for you have that
19 conversation?
20   MR. RAGLAND: Same objections.
21   THE WITNESS: No, not -- not to my
22 knowledge.
23 BY MS. HURST:
24   Q   So the Pixel C ultimately shipped with
25 Android as an operating system, true?

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1   A   That's correct.
2   MR. RAGLAND: Same objections.
3 BY MS. HURST:
4   Q   Do you have any understanding why Google
5 shipped a tablet with the keyboard using the brand
6 Pixel, which had previously been its laptop brand,
7 and used the Android operating system rather than
8 the Chrome operating system?
9   MR. RAGLAND: Objection; form and beyond
10 the scope of noticed topics?
11   THE WITNESS: I -- I would only be
12 speculating. I mean, the branding decisions are
13 made by the marketing team, and the choice of
14 operating system was done by the product team. I
15 wasn't involved in any of those decisions.
16 BY MS. HURST:
17   Q   Did you find the Ars Technica article that
18 I marked as Exhibit 5089 to be generally accurate?
19   MR. RAGLAND: Objection to form and beyond
20 the scope.
21   THE WITNESS: I actually thought it was
22 interesting from the standpoint of there were a lot
23 of things that he wrote about which I didn't know.
24 But I don't actually know how much of it is -- is
25 accurate.

27 (Pages 102 - 105)

1 BY MS. HURST:

2   Q   Did Exhibit 5089, this article, did it

3 prompt any discussion on your part with anybody else

4 at Google about the information contained therein?

5   MR. RAGLAND: Objection to form and beyond

6 the scope.

7   THE WITNESS: Other -- other people on the

8 team saw it. I think, in general, people thought it

9 was an interesting analysis but, you know, there

10 wasn't really any discussion beyond that.

11   MS. HURST: Exhibit 5090 is a Wall Street

12 Journal article dated October 29, 2015, entitled

13 "Alphabet's Google to Fold Chrome Operating System

14 into Android."

15   (Deposition Exhibit 5090 marked

16   for identification.)

17 BY MS. HURST:

18   Q   Mr. Lin, did you read this article on or

19 about the time it was published?

20   A   I did.

21   Q   And what was your reaction to it at the

22 time?

23   MR. RAGLAND: Objection; outside the

24 scope.

25   THE WITNESS: My impression was that

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1 somebody who had done some analysis was completely

2 misreading what was actually going on.

3 BY MS. HURST:

4   Q   Why did you have that reaction?

5   A   Because we're not folding the Chrome

6 operating system into Android.

7   Q   At least not as far as you know?

8   MR. RAGLAND: Objection to form.

9   THE WITNESS: I'm certain that we're not

10 folding Chrome OS into Android. We've been very

11 clear about what we are doing, which is that we're

12 bringing capabilities of Android over to Chrome OS,

13 and we're bringing some of the best features of

14 Chrome OS over to Android. And to some people, that

15 might look like the two are converging, but

16 technically, Chrome OS is an independent program,

17 and we're continuing to improve on it.

18   Android is an independent program with

19 independent team of engineers that we're improving,

20 and what might be apparent to users is not what's

21 actually happening in terms of the engineering

22 development of those products.

23 BY MS. HURST:

24   Q   All right.

25   So if you bring all the capabilities of

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1 Android to Chrome and you bring all the capabilities

2 of Chrome to Android, then you have two separate

3 things with the exact same set of capabilities?

4   MR. RAGLAND: Objection to form.

5 BY MS. HURST:

6   Q   Is that right?

7   MR. RAGLAND: Objection to form, outside

8 the scope of noticed topics.

9   THE WITNESS: I would disagree in that the

10 reality of what's actually happened is not that.

11 What might be apparent to end users is not

12 necessarily what's actually underneath the covers.

13 You can build a house that looks the same, has the

14 same colors and has the same form to outward

15 appearances, but one is built out of wood and one is

16 built out of concrete.

17   And to a customer who walks up to the

18 house and looks at it from the street might have the

19 same number of windows, doors, same plumbing, but

20 the two are not nearly the same in terms of the

21 construction or the capability.

22 BY MS. HURST:

23   Q   So in your view, the Wall Street Journal

24 got it wrong when it said the company plans to

25 unveil its new single operating system in 2017?

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1   MR. RAGLAND: Objection to form and beyond

2 the scope of noticed topics.

3   THE WITNESS: I believe the fundamental

4 premise is incorrect, that Google is not folding

5 Chrome OS into Android.

6 BY MS. HURST:

7   Q   Or vice versa?

8   MR. RAGLAND: Same objections.

9   THE WITNESS: Correct.

10 BY MS. HURST:

11   Q   What was the goal of creating ARC Welder?

12   MR. RAGLAND: Objection to scope.

13   THE WITNESS: Are you asking about the

14 technical goal or what -- what do you mean?

15 BY MS. HURST:

16   Q   Well, let's start with the technical goal.

17   MR. RAGLAND: Same objection, also to

18 form.

19   THE WITNESS: The technical goal was to

20 just make it easier for application developers to

21 put the finishing touches on Android applications so

22 that they could run on Chrome OS.

23 BY MS. HURST:

24   Q   What were the bus- --

25   What was the business goal or goals of

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28 (Pages 106 - 109)

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1 creating ARC Welder?
2   MR. RAGLAND: Objection; beyond the scope
3 and form.
4   THE WITNESS: For Android developers, it
5 was to expand the potential market opportunity for
6 them.
7 BY MS. HURST:
8   Q   What about for Google?
9   MR. RAGLAND: Same objections.
10   THE WITNESS: I think for Google it was to
11 enable our customers on all platforms to have access
12 to as many applications as possible.
13 BY MS. HURST:
14   Q   And how did you expect that wide- -- more
15 widespread availability to benefit Google?
16   MR. RAGLAND: Objection to form and beyond
17 the scope of noticed topics.
18   THE WITNESS: Our goal is to build a great
19 experience for customers, so the more we can enable
20 them to do, the better.
21 BY MS. HURST:
22   Q   And how does that benefit Google?
23   MR. RAGLAND: Same objections.
24   THE WITNESS: Happier customers spend more
25 time online.

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1 BY MS. HURST:
2   Q   How does that benefit Google?
3   MR. RAGLAND: Same objections.
4   THE WITNESS: Well, I mean, you know,
5 our -- our goal is to enable people to get access to
6 more information more quickly, and if we can get
7 more people online, we bring more content providers
8 and application creators online, and we allow people
9 to do more.
10 BY MS. HURST:
11   Q   And how does that benefit Google?
12   MR. RAGLAND: Same objections.
13   THE WITNESS: Google makes money
14 indirectly, I suppose.
15 BY MS. HURST:
16   Q   Google is a for-profit company, right?
17   A   Absolutely.
18   Q   You're not just doing this out of the
19 goodness of your hearts, true?
20   MR. RAGLAND: Objection; form and beyond
21 the scope.
22   THE WITNESS: There are a number of
23 projects that Google does that, you know, are purely
24 for, you know, the benefit of -- of mankind. So --
25

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1 BY MS. HURST:
2   Q   And what enables Google to --
3   MR. RAGLAND: Sorry. Were you finished
4 with your answer? I'm just making sure there's not
5 interruption.
6   THE WITNESS: Yes. Okay. Thanks.
7 BY MS. HURST:
8   Q   And what enables Google to invest in those
9 products?
10   MR. RAGLAND: Objection; form and beyond
11 the scope.
12   THE WITNESS: We have engineers who love
13 working on those projects, and we have, you know --
14 Google is willing to fund those efforts.
15 BY MS. HURST:
16   Q   And Google has to make money in order to
17 fund those efforts, right? You're paying those
18 engineers, true?
19   MR. RAGLAND: Objection; form and beyond
20 the scope.
21   THE WITNESS: We are paying those
22 engineers, yes.
23 BY MS. HURST:
24   Q   And all of this activity comes back to
25 Google's ability to earn revenue largely from

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1 advertising, true?
2   MR. RAGLAND: Objection; form, beyond the
3 scope.
4   THE WITNESS: Google makes money from
5 advertising, that's true.
6 BY MS. HURST:
7   Q   Are you familiar with the term "traffic
8 acquisition cost"?
9   A   Yes, I am.
10   Q   Have you heard that term used at Google?
11   MR. RAGLAND: Objection; beyond the scope.
12   THE WITNESS: I have.
13 BY MS. HURST:
14   Q   And what does it mean?
15   MR. RAGLAND: Same objection.
16   THE WITNESS: Traffic acquisition cost is
17 the cost of, you know, attracting people to
18 someone's website.
19 BY MS. HURST:
20   Q   And what business is traffic acquisition
21 cost an expense component of?
22   MR. RAGLAND: Objection to form and beyond
23 the scope.
24   THE WITNESS: I -- I mean, it's part of
25 the cost of doing business. If you're asking what

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29 (Pages 110 - 113)

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1 is the specific account or how do we account for it,
2 that's -- I don't know. I don't know the details.
3 BY MS. HURST:
4   Q   What is ARC?
5   MR. RAGLAND: Objection; beyond the scope,
6 form.
7   THE WITNESS: I believe you're asking
8 about the application runtime for Chrome?
9 BY MS. HURST:
10   Q   Is ARC an acronym that you use to refer to
11 app runtime for Chrome?
12   A   If -- if we're talking about the same
13 thing, yes.
14   Q   In the phrase "ARC Welder," that is what
15 "ARC" stands for, app runtime for Chrome?
16   A   Right.
17   Q   Do you have any plan to support ARC on any
18 other operating systems?
19   MR. RAGLAND: Objection to form, beyond
20 the scope.
21   THE WITNESS: No, we don't.
22 BY MS. HURST:
23   Q   Do you have any plan to support the app
24 runtime for Chrome on Windows, for example?
25   MR. RAGLAND: Same objections.

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1 supported --
2   Which Android libraries are not supported
3 by the app runtime for Chrome?
4   MR. RAGLAND: Objection to form and beyond
5 the scope of noticed topics.
6   THE WITNESS: I don't actually know.
7 BY MS. HURST:
8   Q   Is there some category of functionality
9 that you're aware of or categories of functionality
10 that you're aware of are not included within the
11 current scope of support of the app runtime for
12 Chrome with respect to Android?
13   MR. RAGLAND: Same objections.
14   THE WITNESS: There isn't anything
15 specific that I know of, and it's possible that we
16 actually do support absolutely everything. The
17 reason I'm -- I'm not trying to be evasive. The
18 reason I'm answering the way I am is because I know
19 that we don't have every application in the Android
20 play -- in the Play Store working on Chrome OS
21 through this model, and that may be because we're
22 incomplete, but it might also be because the
23 hardware for Chrome OS doesn't support all the
24 things that are available on Android phones.
25   So, like I said, we may have support all

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1   THE WITNESS: Not currently, no.
2 BY MS. HURST:
3   Q   Any plan to support the app runtime for
4 Chrome on Mac OS?
5   MR. RAGLAND: Same objections.
6   THE WITNESS: Not currently that I'm aware
7 of, no.
8 BY MS. HURST:
9   Q   Does ARC, the app runtime for Chrome,
10 support all of the libraries available on Android?
11   MR. RAGLAND: Objection to form, beyond
12 the scope of noticed topics.
13   THE WITNESS: I believe our goal is to
14 support as much as possible, but I don't believe
15 that we've been able to, as of this time -- as of
16 this point in time.
17 BY MS. HURST:
18   Q   Is there some version of Android that's
19 API-level version that's been released where ARC
20 does support all of the libraries?
21   MR. RAGLAND: Same objections.
22   THE WITNESS: I don't know that we have
23 produced that or that it's been made available, no.
24 BY MS. HURST:
25   Q   Which -- which libraries are not

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1 there. It's just a matter of getting application
2 developers to make their applications at the margin
3 work. I just don't know for certain, one way or the
4 other.
5 BY MS. HURST:
6   Q   And is it your goal and plan to get
7 application developers to do the work to support
8 Android on Chrome OS using ARC Welder or otherwise?
9   MR. RAGLAND: Objection to form and beyond
10 the scope of noticed topics.
11   THE WITNESS: I think if we could make it
12 possible for every Android application to run on
13 Chrome OS without any developer work, that would be
14 phenomenal; just like I think Microsoft would love
15 to have every Android application running on
16 Windows, and I suspect, at least customers who are
17 using iPhones, would love to have all the Android
18 apps that aren't currently running on iPhones
19 available to them on iPhones as well.
20 BY MS. HURST:
21   Q   Does ARC support Google Play Services?
22   MR. RAGLAND: Objection; beyond the scope.
23   THE WITNESS: I don't know the answer to
24 that.
25

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30 (Pages 114 - 117)

1 BY MS. HURST:
2   Q   Are you aware of any difference in traffic
3 acquisition costs for Google from Web pages versus
4 mobile applications?
5   MR. RAGLAND: Objection to form and beyond
6 the scope of noticed topics.
7   THE WITNESS: I don't -- I don't have any
8 of the details.
9 BY MS. HURST:
10   Q   Are you generally aware that there is or
11 is not some difference in traffic acquisition costs
12 for Google between Web pages versus applications?
13   MR. RAGLAND: Objection to form and beyond
14 the scope.
15   THE WITNESS: There's difference in
16 traffic acquisition between mobile applications
17 and -- just between mobile applications and between
18 Web pages. I mean, there's differences everwhere.
19   I wouldn't say that it's categorically one
20 is -- mobile applications on the whole are different
21 than Web pages on the whole. They're all different.
22 Every -- every application has unique
23 characteristics, every website has unique
24 characteristics.
25   I'm sure there are certain websites that

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1 have higher traffic acquisition costs than less
2 popular mobile apps. So it's all over the map.
3 BY MS. HURST:
4   Q   All right.
5   Mr. Lin, looking at Topic 5, what can you
6 tell me about Google's negotiations, agreements or
7 contracts for the distribution of Google services or
8 Google applications on non-Android operating
9 systems, starting with how many non-Android
10 operating systems does Google provide either its
11 services or applications?
12   MR. RAGLAND: Objection to form and
13 objection to the extent that the question goes
14 beyond the scope of the limitation on Topic 5.
15   THE WITNESS: So we provide Google's
16 mobile applications on iOS and Android.
17 BY MS. HURST:
18   Q   And when you say "Google mobile
19 applications" are you referring now to some specific
20 set of applications?
21   A   Yes. So the mobile versions of Mail,
22 YouTube, Chrome, Google Docs, Google Drive, YouTube.
23   Q   And have your Google mobile applications
24 ever been available for any other non-Android
25 operating system, other than iOS?

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1   A   I don't know for certain. I believe some
2 of them may have been available for Windows phone or
3 Windows Mobile, but, to be honest, I can't say for
4 certain.
5   Q   And how about BlackBerry; were any ever
6 available for Blackberry?
7   A   I don't know.
8   Q   And when you say iOS and Android, are you
9 including all of the various versions of Android
10 that may be out there, including ones, for example,
11 forks by Amazon or Chinese forks of Android?
12   MR. RAGLAND: Objection to form.
13   THE WITNESS: No. So the -- we only make
14 GMS available for Android-compatible phones.
15 BY MS. HURST:
16   Q   And when you say "Android compatible," you
17 mean phones that have passed -- that conform to the
18 CDD, the Compatibility Definition Document, and have
19 passed the Compatibility Testing Suite?
20   A   That's correct.
21   Q   Do you also make Google Search services
22 available for non-Android operating systems?
23   MR. RAGLAND: Objection to form.
24   THE WITNESS: Google Search is available
25 for iOS as well.

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1 BY MS. HURST:
2   Q   And in what form is Google Search
3 available for iOS?
4   A   I believe there's a search app.
5   Q   Is it available in any other form?
6   MR. RAGLAND: Objection to form and beyond
7 the scope.
8   THE WITNESS: Well, it's available --
9 people can do searches through the Chrome browser.
10 BY MS. HURST:
11   Q   Any other form?
12   MR. RAGLAND: Same objections.
13   THE WITNESS: Those are the -- those are
14 the two that come to mind.
15 BY MS. HURST:
16   Q   What about, for example, the Safari
17 browser running on iOS?
18   A   Safari is not an application that we
19 produce or develop.
20   Q   But are Google Search services available
21 through Safari?
22   MR. RAGLAND: Same objections.
23   THE WITNESS: As a browser, anybody can go
24 to Google.com.
25

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31 (Pages 118 - 121)

1 BY MS. HURST:
2   Q   Including users of Safari?
3   A   Including users of Safari, right.
4   Q   And earlier in the deposition today, you
5 identified, you know, the URL box in a browser as a
6 place where there can be searching.
7   Do you recall that testimony?
8   A   Yes.
9   Q   And is that true in Safari as well?
10   MR. RAGLAND: Objection to form and beyond
11 the scope.
12   THE WITNESS: People can go to Google.com
13 from Safari. I don't know whether they can do a
14 search directly from Safari, and I don't know how
15 Safari's configured for search, whether it
16 automatically goes to Google or it goes to other
17 search engines.

1 not paying -- they're not paying us; they're paying
2 Apple.
3 BY MS. HURST:
4   Q   Is Google Play Services available for any
5 operating system, other than Android?
6   A   It's just Android.
7   Q   Could Google Play Services work with any
8 operating system, other than Android?
9   MR. RAGLAND: Objection to scope.
10   THE WITNESS: I suppose -- I mean, today
11 that's not possible.

3 BY MS. HURST:
4   Q   Is Google Play Services available for iOS?
5   A   Google Play Services is not available for
6 iOS. As I mentioned earlier, it's part of the
7 bundle for Android, but for iOS, we only ship the
8 actual applications, not the -- not Play services.
9   Q   And why not?
10   MR. RAGLAND: Objection to the extent it's
11 beyond the scope of topics for which this witness is
12 presented.
13   THE WITNESS: They're -- they're not
14 relevant on iOS.
15 BY MS. HURST:
16   Q   Well, authentication's relevant on iOS,
17 right?
18   MR. RAGLAND: Same objection.
19   THE WITNESS: On iOS, people use Apple's
20 authentication scheme.
21 BY MS. HURST:
22   Q   In-payment processing is relevant on iOS?
23   MR. RAGLAND: Same objection.
24   THE WITNESS: My under- -- on iOS, people
25 use the iTunes store and the app store, so they're

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32 (Pages 122 - 125)

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

34 (Pages 130 - 133)
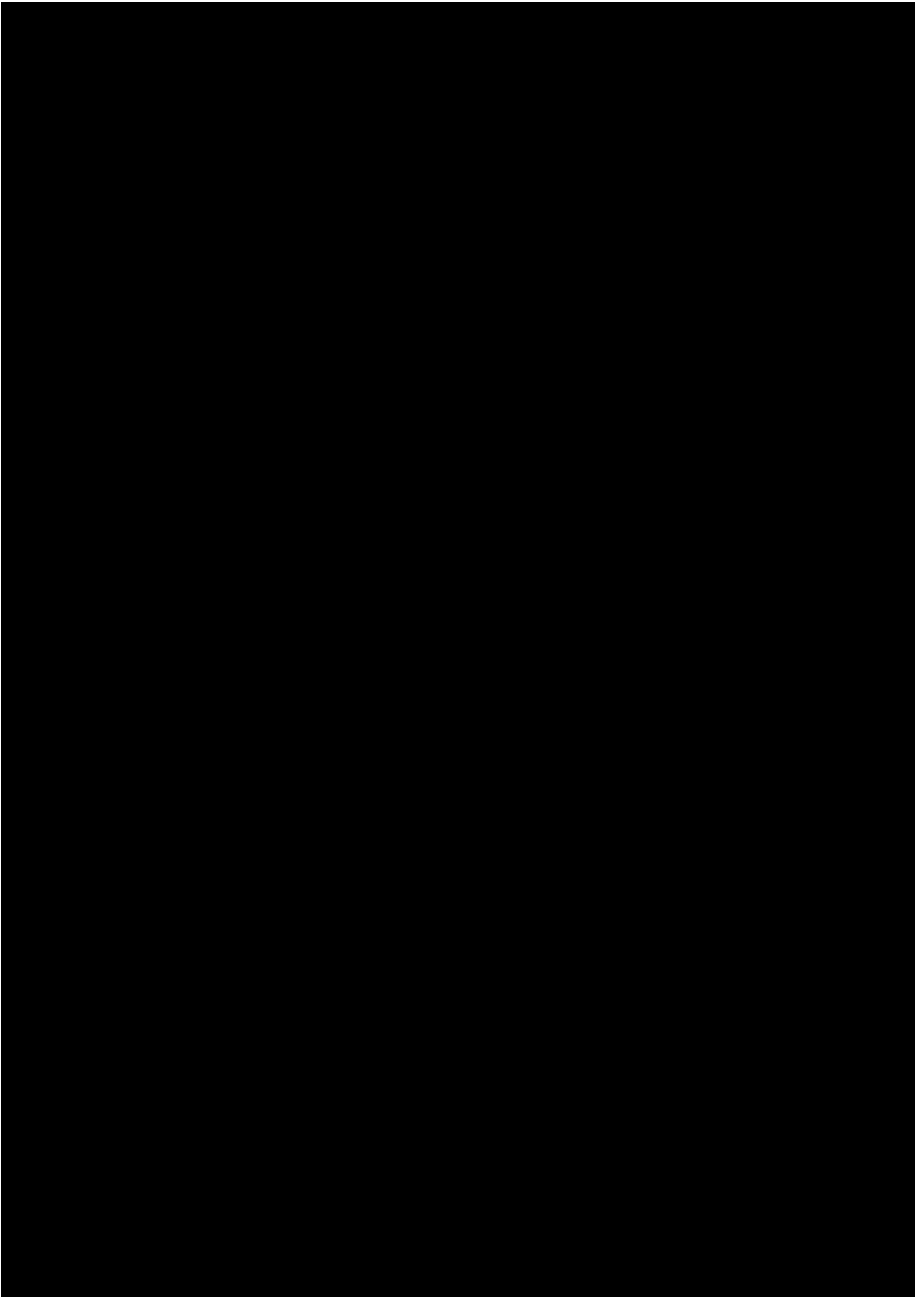
1 software the Chrome browser.
2 BY MS. HURST:
3   Q   And the Chrome browser that you include in
4 the system software for Chrome OS has a default
5 search box for Google Search, true?
6   MR. RAGLAND: Objection to form and beyond
7 the scope.
8   THE WITNESS: The chrome browser in
9 Chrome OS is exactly the same as the Chrome browser
10 on every platform. Has an Omnibox which allows
11 people to type in URLs as well as search terms, and
12 out of the box, by default, it is set up to go to
13 Google.com and perform a search if the end user has
14 not signed into Chrome under -- on a different
15 machine and has not established a different default
16 search provider.
17   So I'll say it a little bit differently to
18 make it a little more clear.
19   If you are set up and you use Chrome on
20 any platform -- Windows, Mac -- and your default
21 search provider is Yahoo, then when you start up
22 your Chrome browser and you sign in on a Chromebook,
23 Yahoo will be the default search provider because we
24 synchronize across all the platforms.
25
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1 BY MS. HURST:
2   Q   But if you have not changed the default,
3 then when you get the machine out of the box, turn
4 it on and fire up the browser, you're going to go to
5 Google for search services, true?
6   A   That's true because we have no other
7 option at that point.
8   MR. RAGLAND: Whenever is convenient for a
9 break.
10 BY MS. HURST:
11   Q   All right.
22   Q   Are you familiar that at one point in time
23 there was a Palm WebOS operating system-based
24 browser?
25   A   Yes.
Page 137

14 Chromebook, right?
15   MR. RAGLAND: Objection to scope.
16   THE WITNESS: So they can download
17 extensions to the browser and they can install apps,
18 but the system image and all of the system software
19 is exactly the software that we shipped.
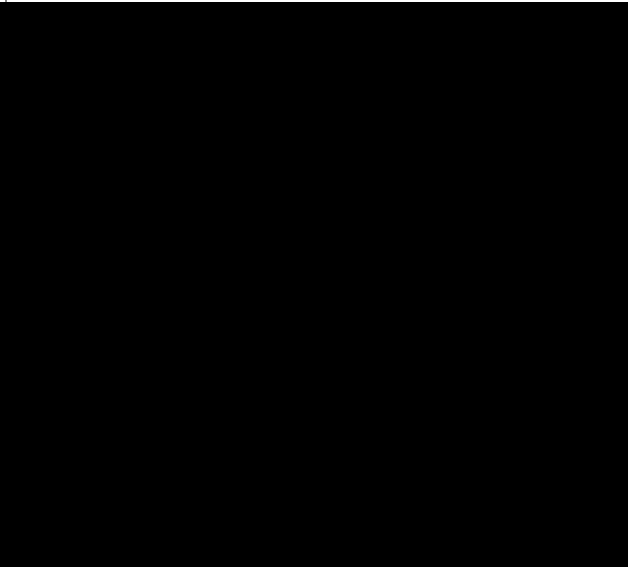20 BY MS. HURST:
21   Q   And you include in the system software the
22 Chrome browser, true?
23   MR. RAGLAND: Objection -- objection to
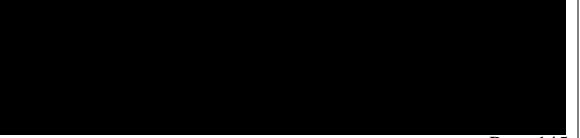24 scope.
25   THE WITNESS: We include in the system
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35 (Pages 134 - 137)

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HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   MR. RAGLAND: Objection; form and beyond
2 the scope.
3   THE WITNESS: Sorry.
4 BY MS. HURST:
5   Q   And that's a non-Android-based browser,
6 right?
7   MR. RAGLAND: Same objections.
8   THE WITNESS: Yes.

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1   MS. HURST: Okay. If you wanted to take a
2 break.
3   MR. RAGLAND: Sure.
4   THE VIDEOGRAPHER: Going off the record.
5 The time is 2:23.
6   (Recess taken.)
7   THE VIDEOGRAPHER: This marks the
8 beginning of DVD Number 3 in the deposition of Felix
9 Lin. Going back on the record. The time is 2:46.
10 BY MS. HURST:
11   Q   Mr. Lin, have you ever heard the acronym
12 AFS at Google to refer to AdSense for Search?
13   MR. RAGLAND: Objection; form and scope.
14   THE WITNESS: I have heard of that term,
15 AdSense for Search.
16 BY MS. HURST:
17   Q   And are you familiar generally with
18 AdSense at Google?
19   A   Yes.
20   Q   And what is it?
21   MR. RAGLAND: Objection; outside the
22 scope.
23   THE WITNESS: AdSense is like Adwords, but
24 it's essentially allowing us to place ads on other
25 content providers' websites.

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1 BY MS. HURST:
2   Q   And you mentioned Adwords. What is that?
3   MR. RAGLAND: Same objection.
4   THE WITNESS: Adwords is a program where
5 when people come to Google.com and they type in
6 search terms, we can serve up search results along
7 with ads that are relevant to those search terms.
8 BY MS. HURST:
9   Q   So that's the keyword advertising program
10 that you referred to earlier?
11   A   Exactly. That's right. That's right.
12   Q   And is AdSense the display advertising
13 program that you referred to earlier?
14   A   No. It's the four-line ads that you'll
15 typically see on Google.com.
16   Q   I'm struggling, and I apologize.
17   How are those four-line ads different from
18 what gets served up in response to keywords as part
19 of the keyword advertising program?
20   MR. RAGLAND: Objection; outside the
21 scope.
22   THE WITNESS: So it's actually the same
23 thing. When you look at -- when you go to
24 Google.com, you'll see a search box at the top.
25 People type in their search terms, and if you search

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1 for "skateboard," typically on the left side, the
2 two-thirds of the screen, you'll see a bunch of what
3 we call organic search results. Those are not paid
4 unless they're explicitly marked "Advertising" or
5 "Sponsored By."
6   On the right-hand side in about a third of
7 the page, you'll see, you know, maybe seven to ten
8 four-line ads, they're short ads, typically with a
9 header and a URL and then two other lines of
10 descriptive text. Those ads are paid for by
11 advertisers who are essentially bidding on the
12 keywords.
13   So if I had skateboards to sell, I might
14 tell Google that I'm willing to pay, let's say, ten
15 cents for every time somebody clicks through on my
16 ad, and then it comes to my website.
17   Google will decide, amongst all the people
18 who are interested in bidding, which ads to serve up
19 in the hopes that, of course, somebody will click on
20 one of those ads, and Google will be paid ten cents
21 at that point, or whatever the appropriate bid is.
22   So that's how the AdWords program works.
23 BY MS. HURST:
24   Q   All right.
25   And what part, if any, of what you just

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36 (Pages 138 - 141)

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1 described is the AdSense piece?
2   A   So what I described there is the user
3 experience when you go to Google.com.
4   Anywhere off of Google, Google.com, if you
5 go to, let's say, SkiMagazine.com or even Yahoo.com,
6 sometimes you'll see on a Web page similarly on the
7 right-hand rail, space for -- typically right at the
8 top, "Ads Sponsored by Google."
9   And what happens is that as Google is
10 crawling the Web and looking at new content every
11 day, Google is looking at all the content presented
12 on the page and matching up certain keywords that it
13 found on the page against advertisers who are
14 interested in being seen when people enter those
15 keywords.
16   The reason it's called AdSense is people
17 aren't actually typing keywords into those pages.
18 It's just from the context of words on the page that
19 these might be relevant ads. So the AdSense program
20 uses space that content providers pre-allocate to
21 Google to place ads, and then when people click
22 through those ads, Google shares the revenue with
23 the content owner.
24   Q   All right.
25   And so AdSense is kind of, you know --

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1 the way it works. I believe that we dynamically in
2 the process of crawling the page and indexing the
3 content so that we can provide faster search results
4 for people who are just searching for content. In
5 the course of doing that, we automatically determine
6 what the keywords are that are relevant on the page.
7
8
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22   Q   So using the description you gave a moment
23 ago of AdSense where you go to a website -- I think
24 Ski World Magazine was the example you gave -- how
25 would it be possible -- well, strike that.

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1 there are algorithms that assess the content of
2 somebody else's website and serve up, then, the
3 four-line links --
4   A   That's right.
5   Q   -- AdWord links, that you might also find
6 on Google.com in response to a keyword search?
7   A   That's right.
8   Q   All right.
9   So in both cases, the content of the ad
10 remains the same, but there are different ways for
11 the customer to get to the ad --
12   MR. RAGLAND: Objection; form.
13 BY MS. HURST:
14   Q   -- or be displayed in the ad?
15   A   It can be the same ads. They're just
16 viewed on different search -- different properties
17 online.
18   Q   Got it. Thank you.
19   And is there a way that you enable people
20 to actually tune their own websites related to that
21 AdSense advertising in order to make it more
22 effective? Do you allow them to create keywords on
23 their own sites for that purpose?
24   MR. RAGLAND: Objection to form and scope.
25   THE WITNESS: I don't believe that that's

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1   Does that work on mobile devices too?
2   MR. RAGLAND: Objection to form and
3 outside the scope of designated topics.
4   THE WITNESS: Technically it could work,
5 but I believe -- but I'm not sure that we actually
6 do that because the screen real estate on mobile
7 devices is so limited. I don't know that we can
8 actually do that.
9 BY MS. HURST:
10   Q   Do you have any understanding of how
11 AdSense operates with respect to mobile devices?
12   MR. RAGLAND: Same objections.
13   THE WITNESS: I don't know.
14 BY MS. HURST:
15   Q   All right.
16   Are you familiar with any kind of a
17 program called AdSense for Content?
18   MR. RAGLAND: Objection; outside the
19 scope.
20   THE WITNESS: I'm not familiar with
21 AdSense for Content.
22
23
24
25

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37 (Pages 142 - 145)

38 (Pages 146 - 149)
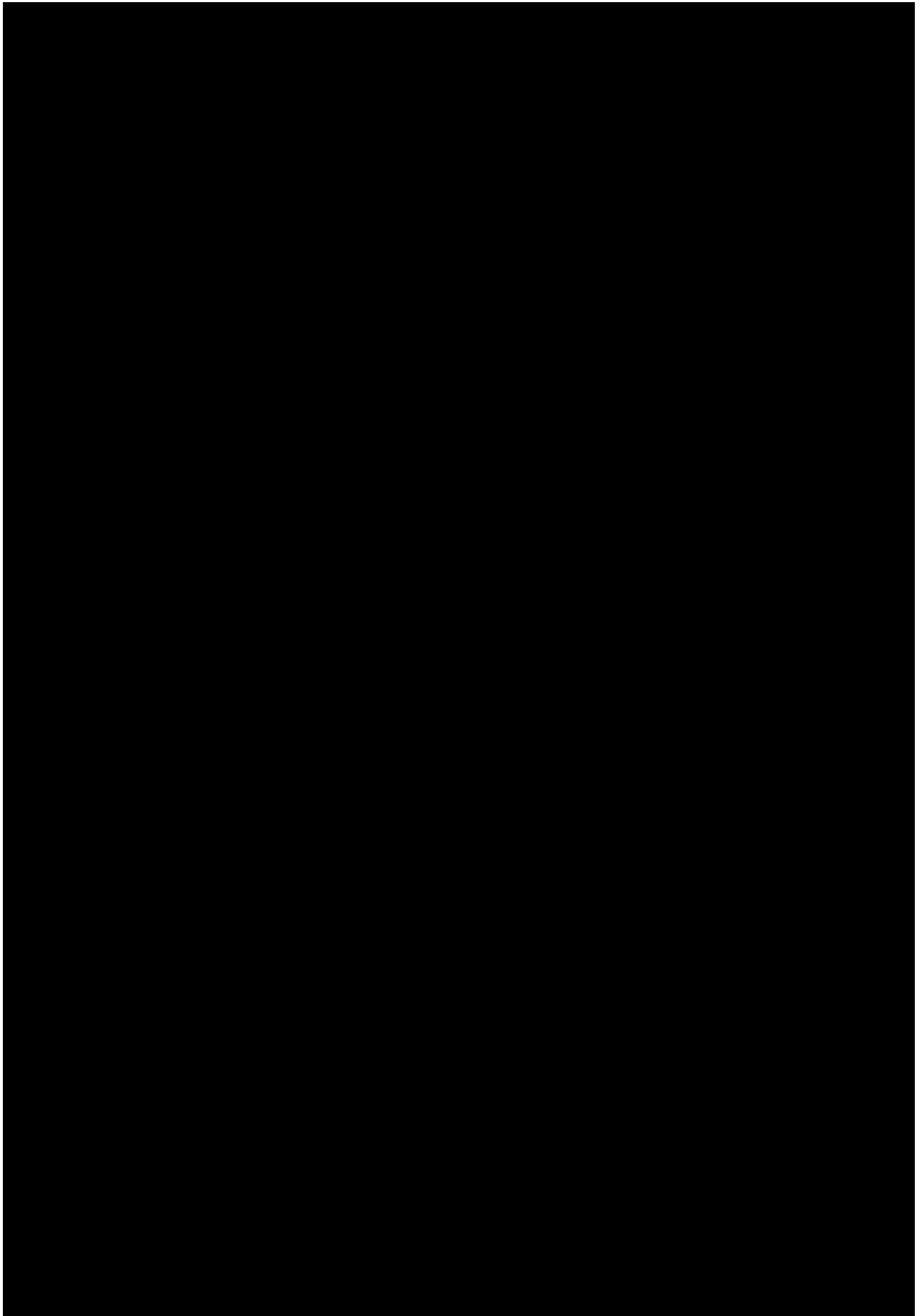
6   Q   What do you understand "search entry
7 point" to mean?
8   MR. RAGLAND: Objection to form, beyond
9 the scope.
10   THE WITNESS: It's just another word for
11 "search box."
12 BY MS. HURST:
13   Q   What does "directed traffic" mean?
14   MR. RAGLAND: Same objections.
15   THE WITNESS: I'm not completely sure.
16 How is it -- how is it used?
17 BY MS. HURST:
18   Q   Well, let's say in an agreement between
19 Google and a carrier, are you familiar with the
20 concept of directed traffic?
21   MR. RAGLAND: Same objections.
22   THE WITNESS: I'm not completely sure.

39 (Pages 150 - 153)

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12   Q   And do sometimes Android phones --
13   Are you familiar with the phrase "locked"
14 or "unlocked" as refers to mobile phones?
15   A   Uh-huh.
16   Q   And what do you understand those terms to
17 mean?
18   A   Locked phones are -- will only work on the
19 carrier from which the customer purchased the phone.
20   Q   And unlocked, you could use it with a
21 variety of characters -- pardon me, carriers?
22   A   Characters is right.
23   Q   Characters, right, yes. Freudian slip.
24   So do you have any general understanding
25 that with respect to an unlocked phone, you would

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1 want to negotiate the revenue sharing agreement with
2 the manufacturer of the phone, and with a locked
3 phone, you would want to negotiate the agreement
4 with the carrier?
5   MR. RAGLAND: Objection; form and beyond
6 the scope.
7   THE WITNESS: That would make sense, yes.
8 BY MS. HURST:
9   Q   And with a locked phone, then, that means
10 that manufacturer of the equipment is agreeing only
11 to offer that device in connection with a particular
12 carrier, true?
13   MR. RAGLAND: Objection to the form and
14 beyond the scope of noticed topics.
15   THE WITNESS: If it's a locked phone,
16 essentially the hardware manufacturer only makes
17 that phone available from that carrier, yes.
18   MS. HURST: Where are we on time?
19   THE VIDEOGRAPHER: We have -- you have 40
20 minutes left.
21   MS. HURST: Okay. I want to pull a series
22 of documents. So let's take a short break, and I'll
23 do that.
24   MR. RAGLAND: Sure.
25   THE VIDEOGRAPHER: Going off the record.

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1 The time is 3:15.
2   (Recess taken.)
3   THE VIDEOGRAPHER: We're back on the
4 record. The time is 3:28.
5   MS. HURST: Exhibit 5093 is GOOG-00130126
6 through -40.
7   (Deposition Exhibit 5093 marked
8   for identification.)
9   MS. HURST: You know what, that one is a
10 double-sided copy. Do you want me to give you
11 single sided?
12   THE REPORTER: Doesn't matter.
19   Q   Have you ever heard the Google Play
20 Services referred to as Google Mobile Core or G Core
21 or GMS Core?
22   A   I've heard those different terms on
23 occasion, but I don't know that they actually all
24 refer to Play Services.
25   Q   And has Google Play Services ever been

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1 referred to as the Google Services Framework?
2   MR. RAGLAND: Objection to form.
3   THE WITNESS: It's possible. I don't -- I
4 mean, I always call it Play Services.
5 BY MS. HURST:
6   Q   Okay.
7   Did Google Play Services have a name, a
8 different name, before it was called Google Play
9 Services?
10   A   It may have before my time, so that may be
11 where some of these names come from.
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40 (Pages 154 - 157)

7   Google Play Client, what is that?
8   A   I believe this is just the stuff that's
9 related to authenticating your account so that when
10 you sign into the Google Play Store, we match up the
11 ID with the person who signed in using the phone and
12 keeping track of the things that you've purchased.
22   Q   What is the Google Services Framework?
23   A   It's just all the ancillary services, you
24 know, associated with the location services, network
25 services. I don't have the full -- I don't have the

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1 triangulate.
2 BY MS. HURST:
3   Q   And you mentioned that network services
4 were part of the Google Services Framework. What
5 did you mean by "network services" in that context?
6   A   I don't know specifically. I'm just
7 saying, you know, things that are background
8 services.
9   Q   Can you describe the functionality in some
10 way that --
11   A   I would have to get you more detailed
12 information. From my standpoint, these are all just
13 a bundle of applications that are distributed as a
14 bundle for compatible devices. I don't know exactly
15 what functions or services are partitioned into each
16 one of these by name. I've never had to break it
17 down that way.
18   Q   All right.
19   What is Google Backup and Restore?
20   A   So this is a set of services that is
21 backing up files, photos, device settings, you know,
22 the placement of icons on various screens that you
23 might have once you've installed applications if
24 you've moved them around.
25   I don't know the exact details of

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1 details.
2   Q   Okay.
3   Location Services, that's, you know, the
4 ability for the phone to determine its approximate
5 location in the world; is that right?
6   A   Right.
7   Q   And was that ever part of the Android
8 platform, that capability?
9   A   There may be portions of it that are and
10 some of it may not be. For example, just -- just
11 the -- I'm sure that Android open source framework
12 includes provisions for just taking a GPS signal but
13 combining the GPS signal with other information
14 about, like, Wi-Fi networks and things like that,
15 might provide different location capabilities.
16   Q   Android, the platform, certainly provides
17 the capability for a device to connect to a Wi-Fi
18 network, true?
19   MR. RAGLAND: Objection; form and scope.
20   THE WITNESS: So this might be, you know,
21 information that Google knows about, you know,
22 actual Wi-Fi networks. So not just being able to
23 connect to a Wi-Fi network, but the fact that if
24 you're in range of two or three specific Wi-Fi
25 networks, it knows where you are differently, can

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1 specifically all the things that get backed up, but
2 our goal has been to make it easier for people to
3 back up the entire phone so that if they lose a
4 phone and they buy a replacement, they can easily
5 get back to where they -- where they were before
6 without having to do a bunch of work.
7   Q   Is there any backup and restore capability
8 in the Android platform itself?
9   MR. RAGLAND: Objection; beyond the scope.
10   THE WITNESS: I don't know for certain. I
11 don't believe so because backup and restore has
12 different behavior on different phones, so I believe
13 it depends on what the manufacturers are
14 implementing. There may be some limited form of
15 backup.

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41 (Pages 158 - 161)

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1 outside.
2 BY MS. HURST:
3   Q   You don't use any that are outside of the
4 CDD?
5   A   Outside of the CDD, right. Sorry.
6   Q   So Google Play Services APIs are all
7 within the CDD, but you're not certain whether the
8 CDD is limited to the Google Play Services API?
9   MR. RAGLAND: Same objections.
10   THE WITNESS: That's correct.
11 BY MS. HURST:
12   Q   Is it possible for the handset
13 manufacturers to add functionality to their devices
14 that is not specified by the CDD and still pass the
15 CTS?
16   MR. RAGLAND: Objection; form and scope.
17   THE WITNESS: It is definitely possible,
18 yes.
19 BY MS. HURST:
20   Q   Can you think of any examples?
21   MR. RAGLAND: Same objections.
22   THE WITNESS: So we have device
23 manufacturers that have implemented multi-window
24 support, and that's not currently in the CDD for
25 Android.

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24 BY MS. HURST:
25   Q   What information do you provide to a

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1 manufacturer that enables it to integrate Google
2 Play Services into its device?
3   MR. RAGLAND: Same objection.
4   THE WITNESS: If they have an Android
5 compatible device and it passes the CTS, the full
6 suite of tests, all of our services will work.
7 BY MS. HURST:
8   Q   Is there an API associated with Google
9 Play Services?
10   MR. RAGLAND: Same objection.
11   THE WITNESS: We only make use of the APIs
12 that are part of the CDD.
13 BY MS. HURST:
14   Q   So it's the same thing?
15   MR. RAGLAND: Objection; form, beyond the
16 scope.
17   THE WITNESS: I'm not sure -- are you
18 saying the --
19 BY MS. HURST:
20   Q   Is the Google Play Services API entirely
21 contained within the Compatibility Definition
22 Document?
23   MR. RAGLAND: Objection to form and scope.
24   THE WITNESS: It is. I don't know that we
25 use every single API, but we don't use any that are

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1 BY MS. HURST:
2   Q   And will all the applications in the
3 Google Play Store still run on those multi-window
4 devices?
5   MR. RAGLAND: Objection; form and scope.
6   THE WITNESS: Yes.
7 BY MS. HURST:
8   Q   And will applications written for those
9 multi-window devices still run on all other Android
10 devices?
11   MR. RAGLAND: Same objections.
12   THE WITNESS: No.

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42 (Pages 162 - 165)

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

7 BY MS. HURST:
8   Q   Well, I think what you're saying is that
9 if somebody wrote an application for that Samsung
10 device using the fingerprint sensor, it would still
11 run on other devices?
12   MR. RAGLAND: Objection; form.
13   THE WITNESS: If somebody -- because that
14 device makes use of hardware and offers features
15 above and beyond the compatibility definition,
16 applications that don't make use of those will, of
17 course, still run. However, applications that
18 require -- a Samsung application that requires the
19 Samsung fingerprint sensor would not fully run on
20 other devices.
21   In those cases, customers would have to
22 recognize that, you know, here's an application that
23 could make use of the fingerprint sensor to, for
24 example, lock and unlock, but if their device
25 doesn't have a fingerprint sensor, then there's

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1 have 17 more minutes.
2 BY MS. HURST:
3   Q   What is the Google WebView component?
4   A   The WebView component -- the best way to
5 describe it is it's the browser without all of the
6 browser -- browser Chrome or the branding.
7   So, for example, if inside of a mobile app
8 like Facebook, if Facebook wanted to display a Web
9 page inside of their application, they could use the
10 WebView component.
11   Q   So like a headless browser?
12   A   Exactly. Yeah.
13   Q   And have there ever been headless browser
14 capabilities within the Android platform itself?
15   MR. RAGLAND: Objection; beyond the scope.
16   THE WITNESS: I don't know that it was
17 packaged in that form. I believe at one point that
18 there was a Android browser that was part of the
19 Android open source, and people could use that and
20 do what they wanted with it. I'm not sure that
21 people would call it the same thing as the WebView,
22 but it was something similar.
23 BY MS. HURST:
24   Q   What is the Market Updater?
25   A   I think the Market Updater is a utility

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1 nothing they can do about it. Typical --
2 BY MS. HURST:
3   Q   Sorry, go ahead.
4   A   I mean, the clarification here is that,
5 you know, hardware differentiation is good. People
6 can always extend the hardware and go beyond what's
7 part of Android, which is anticipating certain
8 hardware capabilities. The compatibility is
9 important in terms of making sure that all
10 applications have a minimum set of functionality
11 that they can rely on being available on every
12 phone, so...
13   Q   But in the case that you've described, it
14 is certainly not a write once for Samsung run
15 everwhere on all Android devices scenario, true?
16   MR. RAGLAND: Objection to form, beyond
17 the scope of noticed topics.
18   THE WITNESS: The point of the
19 compatability test is to make sure that an
20 application that's written that assumes the
21 compatability definition will work on all Android
22 phones, which includes phones that have more
23 hardware capabilities.
24   MS. HURST: How are we doing?
25   THE VIDEOGRAPHER: We're doing good. You

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1 that is constantly checking to see whether the
2 version of the app that you have on your device is
3 the same as the most recent version of the app that
4 is in the Play Store.
5   Q   What is the Network Location Provider?
6   A   I think it's the thing that we talked
7 about earlier, which is that it's just trying to
8 pinpoint your location using whatever information is
9 available.
10   Q   What is Widevine?
11   A   Widevine is a digital rights management
12 solution for watching protected content, HD content
13 and things like that. Netflix requires Widevine.
14   Q   Earlier you were telling me about the --
15 you were using the analogy of two houses; one that
16 was built from wood and one that was built from
17 concrete, and they both looked the same to the
18 person on the curb.
19   A   Uh-huh.
20   Q   In that analogy you meant the concrete
21 house to refer to Chrome OS and the wood house to
22 refer to Android, correct?
23   MR. RAGLAND: Objection to form.
24   THE WITNESS: Sorry. It didn't really
25 matter either way.

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1 BY MS. HURST:
2   Q   Well, how does it look to the person
3 inside the house?
4   MR. RAGLAND: Objection; form.
5   THE WITNESS: You could be -- you could
6 have the same issue. I mean, whether something is
7 made of wood and painted over, or whether it's made
8 of concrete and painted over, the finishes could be
9 exactly the same; may not necessarily look any
10 different.
11 BY MS. HURST:
12   Q   So I think we might be entering test
13 territory here, Mr. Lin.
14   If they look exactly the same on the
15 outside and the inside, then what's the purpose of
16 having two structures made of different composition?
17 I mean, are we just preparing for earthquakes?
18   MR. RAGLAND: Objection; form and scope.
19   THE WITNESS: Well, I think the -- I mean,
20 a big part of it is what are your future plans for
21 those houses?
22   For the one that's built of wood, you
23 could probably go to two to three stories. Maybe
24 the one that's built of concrete, you could go 60
25 stories, and you might not know today looking at it,
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1 design decisions that are focused on delivering a
2 better mobile experience, not necessarily focused on
3 speed, simplicity or security.
4   So I think as you look at those two, you
5 wind up in slightly different situations in terms of
6 what's possible for developers and end users.
7 BY MS. HURST:

1 but your plan for the future is to be able to be --
2 you know, have much more opportunity.
3 BY MS. HURST:
4   Q   With that understanding as one of the
5 critical differences, is it still your testimony
6 that the difference between -- that that wood could
7 refer to either Android or Chrome OS in this
8 analogy?
9   MR. RAGLAND: Objection to form and scope.
10   THE WITNESS: Yeah. I'm not sure what
11 you're getting at. Yes, they seem interchangeable
12 for these purposes.
13 BY MS. HURST:
14   Q   Isn't it your view that Chrome OS was
15 built with a more solid foundation than Android?
16   MR. RAGLAND: Objection to form, beyond
17 the scope of designated topics.
18   THE WITNESS: You know, our original
19 vision for Chrome was to be able to build very
20 complex systems that were fast, simple and secure.
21 Those were the cornerstones of our design. And if I
22 were to speculate, since I wasn't on the Android
23 team, but, you know, looking back, I would say that
24 the core mission for Android was about mobile. And
25 when you look at the design tradeoffs, they make
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44 (Pages 170 - 173)

45 (Pages 174 - 177)

9 BY MS. HURST:
10   Q   And you don't consider it fragmentation
11 the fact that some devices that compete with one
12 another have different capabilities?
13   MR. RAGLAND: Objection to form and scope.
14   THE WITNESS: My point -- my point was
15 that some forms of fragmentation are actually quite
16 acceptable. Hardware fragmentation is quite
17 acceptable. It's what people -- that's how people
18 differentiate their devices.
19   The thing that we care about is the
20 software compatibility; that when someone writes an
21 application and it runs on an Android phone, the
22 expectation should be that that application will run
23 on any Android phone that carries the Android mark.
24 BY MS. HURST:
25   Q   But that would not be true, for example,

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1 for an application using the Samsung fingerprint
2 reader that you were describing earlier; that would
3 be an application that takes advantage of a piece of
4 hardware that is not available on other devices,
5 true?
6   MR. RAGLAND: Objection; form and scope.
7   THE WITNESS: I don't think we're saying
8 the same thing. If you write an application and it
9 doesn't make use of the fingerprint sensor, which is
10 not part of the CDD, it will run on any Android
11 device that is Android compatible, including devices
12 that have a fingerprint sensor.
13 BY MS. HURST:
14   Q   Is the expectation that an application
15 will run on any Android phone that carries the
16 Android mark?
17   MR. RAGLAND: Objection; form.
18   THE WITNESS: The expectation is that any
19 application that you download from the Play Store
20 should run on any device that has the Android mark.
21 BY MS. HURST:
22   Q   All right.
23   And are there Samsung fingerprint reader
24 applications that can be downloaded from the Google
25 Play Store?

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1   MR. RAGLAND: Objection; form and scope.
2   THE WITNESS: There are not -- no. I
3 mean, people don't download an application that
4 specifically works with the fingerprint sensor.
5 Samsung has built their own applications to work
6 with the fingerprint sensor which only work on the
7 Samsung phone, and it's only relevant on their phone
8 because their phone is the only one that has a
9 fingerprint sensor.
10 BY MS. HURST:
11   Q   So Samsung has its own separate set of
12 applications that run on the Google platform and
13 take advantage of this hardware differentiation?
14   A   That's right. And they will use the
15 fingerprint sensor to implement certain APIs that
16 are relevant for applications; for example, you
17 know, a password.
18   So if an application requires a password,
19 Samsung can implement that API in such a way that
20 information that's read from the fingerprint sensor
21 can be passed to that application. But the
22 application doesn't have to know that it's working
23 with the fingerprint sensor; it just assumes that
24 it's taking password data.
25   Q   And so in other words, Samsung has been

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1 able to write some software that will work with the
2 Android platform that allows the fingerprint data to
3 substitute where there would otherwise be a password
4 required?
5   MR. RAGLAND: Objection; form and scope.
6   THE WITNESS: That's an example I'm -- I'm
7 making up, yes.
8 BY MS. HURST:
9   Q   Okay.
10   And does Samsung modify, extend, subset or
11 otherwise, alter any of the core class libraries of
12 the Android platform in order to offer that
13 capability?
14   MR. RAGLAND: Objection; form, beyond the
15 scope.
16   THE WITNESS: I believe they extend the
17 set of APIs and the framework, but they have to pass
18 all of the CTS tests, which mean that they, in
19 addition to the additions, meet the minimum.
20 BY MS. HURST:
21   Q   Is -- by the way, you said Chromium --
22 Chromium is an open source project?
23   A   Uh-huh.
24   Q   Is Chrome OS derived somehow from
25 Chromium?

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46 (Pages 178 - 181)

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1   A   Chrome OS is essentially Chromium OS,
2 which is the open source version plus the closed
3 source bits.
4   Q   And is Chromium OS under -- what open
5 source license is that under?
6   MR. RAGLAND: Objection to scope.
7   THE WITNESS: I -- I'd have to take a
8 look. I haven't thought about that in a long time.
9 BY MS. HURST:
10   Q   Is it GPL?
11   MR. RAGLAND: Objection to form.
12   THE WITNESS: I'd have to look. I can
13 find out for you.
14   MS. HURST: All right, let's stop for the
15 day.
16   THE VIDEOGRAPHER: Going off the record.
17 The time is 4:07.
18   (Time noted: 4:07 p.m.)
19
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1   I, the undersigned, a Certified Shorthand
2 Reporter of the State of California, do hereby certify:
3   That the foregoing proceedings were taken
4 before me at the time and place herein set forth; that
5 any witnesses in the foregoing proceedings, prior to
6 testifying, were administered an oath; that a record of
7 the proceedings was made by me using machine shorthand
8 which was thereafter transcribed under my direction;
9 that the foregoing transcript is a true record of the
10 testimony given.
11   Further, that the foregoing pertains to the
12 original transcript of a deposition in a Federal Case,
13 before completion of the proceedings, a review of the
14 transcript [X] was [ ] was not requested.
15   I further certify I am neither financially
16 interested in the action nor a relative or employee of
17 any attorney or any party to this action.
18   IN WITNESS WHEREOF, I have this date
19 subscribed my name.
20
21 Dated: 12/16/2015
22
23
24
           Kelli Combs (signature)
           KELLI COMBS
25   CSR No. 7705

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2
3
4
5
6   I, FELIX LIN, do hereby declare under
7 penalty of perjury that I have read the foregoing
8 transcript; that I have made any corrections as
9 appear noted, in ink, initialed by me; that my
10 testimony as contained herein, as corrected, is true
11 and correct.
12   EXECUTED this_____day of_____, 2015, at
13 _____,_____.
14 (city)   (State)
15
16
17   _____
           FELIX LIN
18
19
20
21
22
23
24
25

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[& - acronym]

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[fair - functionality]

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25:7,18 26:5,14,20	121:23 122:12,23	161:6 163:6 167:21	**z** 128:21,21
27:3,13,23 28:16	123:1,11,13,19,24	180:5,6 181:1	
29:2,13,19,25 30:8	124:10 127:11	**worked** 10:8 166:3	
30:12,16,23 31:2,9	130:3,15 132:2,13	**working** 9:25 12:19	
32:3,17 33:1,5,19	132:21 133:7,16,25	25:25 26:10 60:1	
34:20 35:8,13,19	134:7,14,24 135:16	68:12 88:7,18 89:18	
36:3,15 37:1,5,12	135:25 136:8 138:3	104:18 112:13	
37:20 38:4,15,23	138:8,14,25 139:14	116:20 180:22	
39:6,16,25 40:8,14	139:23 140:4,22	**works** 7:20 31:18	
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44:6,11,19 45:7,17	149:1,3,10,16,23	**worksheet** 5:10	
45:25 46:10,18 47:9	150:14,25 151:10	124:16	
47:15,21 48:3,13,20	151:20 152:2,10,15	**world** 33:9 144:24	
49:3,10,15,22 50:16	152:22 153:17	159:5	

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the
deponent or a party before the deposition is
completed, the deponent must be allowed 30 days
after being notified by the officer that the
transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to
sign a statement listing the changes and the
reasons for making them.

(2) Changes Indicated in the Officer's Certificate.
The officer must note in the certificate prescribed
by Rule 30(f)(1) whether a review was requested
and, if so, must attach any changes the deponent
makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES
ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.
THE ABOVE RULES ARE CURRENT AS OF SEPTEMBER 1,
2014. PLEASE REFER TO THE APPLICABLE FEDERAL RULES
OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

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1   UNITED STATES DISTRICT COURT

2   NORTHERN DISTRICT OF CALIFORNIA

3   SAN FRANCISCO DIVISION

4

5   ORACLE AMERICA, INC.,   )

6   Plaintiff,   ) Case No.

7   vs.   ) CV 10-03561 WHA

8   GOOGLE, INC.,   )

9   Defendant.   )

10   _____)

11

12

13   HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

14

15   VIDEOTAPED DEPOSITION OF GOOGLE'S 30(b)(6) WITNESS

16   FELIX LIN

17   San Francisco, California

18   Friday, December 18, 2015

19   Volume II

20

21   Reported by:

22   CARLA SOARES

23   CSR No. 5908

24   Job No. 2203183

25   Pages 185 - 305

                                            Page 185

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 1      UNITED STATES DISTRICT COURT
 2      NORTHERN DISTRICT OF CALIFORNIA
 3        SAN FRANCISCO DIVISION
 4
 5  ORACLE AMERICA, INC.,        )
 6       Plaintiff,      ) Case No.
 7     vs.            ) CV 10-03561 WHA
 8  GOOGLE, INC.,            )
 9       Defendant.      )
10  _____)
11
12
13     HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY
14
15
16      VIDEOTAPED DEPOSITION OF GOOGLE'S
17  30(b)(6) WITNESS FELIX LIN, Volume II, taken on
18  behalf of Plaintiff, at 633 Battery Street,
19  San Francisco, California, beginning at 8:00 a.m.,
20  and ending at 10:59 a.m., on Friday, December 18,
21  2015, before CARLA SOARES, Certified Shorthand
22  Reporter No. 5908.
23
24
25
                                          Page 186
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 1  APPEARANCES (Continued):
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10      sragland@kvn.com
11
12
13  ALSO PRESENT:  Chester Day, In-House Counsel, Google
14        Ramon Peraza, Video Operator
15
16          --o0o--
17
18
19
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21
22
23
24
25
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 1  APPEARANCES:
 2
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22
23
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 1          INDEX
 2  WITNESS
 3  FELIX LIN            EXAMINATION
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 5      BY MS. HURST          193
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 7        EXHIBITS
 8  NUMBER      DESCRIPTION      PAGE
 9  Exhibit 5094  Document headed      194
10      "Multi-networking - Feature in
11      L and M," Bates GOOG-00291517 -
12      1519
13
14  Exhibit 5095  Document labeled "Chrome &    203
15      Android Update,"
16      Bates GOOG-00291608 - 1810
17
18  Exhibit 5096  Email string, top email to    237
19      David Burke from Kan Liu,
20      dated 4-3-15,
21      Bates GOOG-00270758 - 0761
22
23  Exhibit 5097  Document entitled "Getting    254
24      Started with ARC"
25
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2 (Pages 186 - 189)

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1 EXHIBITS 2 NUMBER DESCRIPTION PAGE 3 Exhibit 5098 Document headed "Background 258 4 Information," 5 Bates GOOG-10000734 - 0737 6 7 Exhibit 5099 Document labeled "Lenovo," 271 8 Bates GOOG-00274827 - 4877 9 10 Exhibit 5100 Thumb drive containing a 278 11 spreadsheet, Bates GOOG-00258413 12 13 Exhibit 5101 Document labeled "Android," 283 14 Bates GOOG-00251037 - 1063 15 16 Exhibit 5102 Document labeled "Android ON," 284 17 Bates GOOG-00251200 - 1217 18 19 Exhibit 5103 Document labeled "Android 288 20 Compatible Device," 21 Bates GOOG-00358049 - 8063 22 23 24 25 Page 190	1 San Francisco, California 2 Friday, December 18, 2015 3 8:00 a.m. 4 5 P R O C E E D I N G S 6 THE VIDEO OPERATOR: Good morning. We are 7 on the record at 8:00 a.m. on December 18th, 2015. 8 This is the videotaped deposition of Mr. Felix Lin. 9 My name is Ramon Peraza, here with our 10 court reporter, Carla Soares. We're here from 11 Veritext Legal Solutions at the request of counsel 12 for the plaintiff. 13 This deposition is being held at Keker & 14 Van Nest in San Francisco. The caption of this case 15 is Oracle America, Inc., versus Google, Inc., Case 16 No. CV 10-03561 WHA. 17 Please note that video- and 18 audio-recording will take place unless all parties 19 have agreed to go off the record. Microphones are 20 sensitive and may pick up whispers or private 21 conversations. 22 At this time, Counsel, please identify 23 yourselves for the record and state whom you 24 represent. 25 MS. HURST: Annette Hurst and Michelle Page 192
1 EXHIBITS 2 NUMBER DESCRIPTION PAGE 3 Exhibit 5104 Document headed "Android & 297 4 Chrome Partnerships - Executive 5 Summary - w/e October 16, 2015," 6 Bates GOOG-00257954 - 7966 7 8 --o0o-- 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 Page 191	1 O'Meara from Orrick for Oracle. 2 MR. RAGLAND: Steven Ragland, Keker & 3 Van Nest, on behalf of Google. Also present, 4 Chester Day from Google. 5 THE VIDEO OPERATOR: The court reporter 6 may now swear in the witness. 7 FELIX LIN, 8 having been administered an oath, was examined and 9 testified as follows: 10 EXAMINATION (Continued) 11 BY MS. HURST: 12 Q Good morning, Mr. Lin. 13 A Good morning. 14 Q And you're here testifying again on behalf 15 of Google; do you understand that? 16 A Yes. 17 Q On Topics 3, 4 and 5 in the notice that we 18 looked at previously? 19 A Yes. 20 MR. RAGLAND: As limited, as we discussed 21 previously. 22 MS. HURST: We're not agreeing to any 23 objections, but I understand you're talking about 24 your designations. 25 MR. RAGLAND: Correct. Page 193

<div align="right">3 (Pages 190 - 193)</div>

1   MS. HURST: All right. Exhibit 5094 is
2 GOOG-00291517 through 519.
3   (Exhibit 5094 was marked for
4   identification and is attached hereto.)
5 BY MS. HURST:
6   Q   Mr. Lin, before we look at 5094, would you
7 remind me, you said that for about the last year
8 you've had the responsibility in dealing with
9 Android hardware partners; is that right?
10   A   That's correct.
11   Q   What has been your responsibility for the
12 last year in dealing with Android hardware partners?
13   MR. RAGLAND: Objection. Outside the
14 scope.
15   THE WITNESS: My goal is to make sure that
16 they're able to successfully build Android devices;
17 phones, tablets, and other devices.
18 BY MS. HURST:
19   Q   And does that extend to providing them
20 with support and other information to enable them to
21 build hardware devices using Android?
22   A   Yes.
23   Q   All right. Do you recognize Exhibit 5094?
24   A   I've never seen this.
25   Q   Is there any kind of a website or other

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1 collection of electronic information that Google
2 makes available to its hardware partners about
3 Android?

6 BY MS. HURST:
7   Q   Are you familiar with a multi-networking
8 feature in Android versions L and M?
9   MR. RAGLAND: Objection. Form and scope.
10   THE WITNESS: Only from what I'm reading
11 now.
12 BY MS. HURST:
13   Q   And you're referring to Exhibit 5094?
14   A   Yes, I am.
15   Q   In the Android partner front end, are
16 there documents of the sort that you see in
17 Exhibit 5094 describing features in Android and how
18 to take advantage of them?
19   MR. RAGLAND: Objection. Form, outside
20 the scope.
21   THE WITNESS: I don't believe these types
22 of documents are in the Android partner front end.

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4 (Pages 194 - 197)

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1 Exhibit 5094. One of them is NDK.
2   Are you familiar with that in relation to
3 Android at Google?
4   MR. RAGLAND: Objection to scope.
5   THE WITNESS: I'm not sure what the NDK
6 is. It's a developer kit. I'm not sure what N
7 refers to.
8 BY MS. HURST:
9   Q   And there's a reference to HAL in the last
10 bullet point on the page, the HAL/driver/kernel
11 code.
12   Do you see that?
13   A   I do.
14   Q   And do you have an understanding of what
15 HAL is in relation to Android at Google?
16   MR. RAGLAND: Objection to scope.
17   THE WITNESS: HAL is the hardware
18 extraction layer.
19 BY MS. HURST:
20   Q   And that's part of the Android platform?
21   A   Yes.
22   MR. RAGLAND: Belated objection to form to
23 the prior question. Also outside the scope.
24 BY MS. HURST:
25   Q   Does Google allow its hardware partners to

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10 BY MS. HURST:
11   Q   And is there a confidential -- a place
12 where confidential information of that type is kept?
13   MR. RAGLAND: Same objections.
14   THE WITNESS: None of it really -- it's
15 really only confidential up until the point that the
16 platform is released. So as soon as the feature is
17 released, then it would be on source.android.com.
18 It's completely open.
19   The reason we keep it confidential until
20 it's released is it's incomplete. So typically
21 either it's incomplete or it's not working, and it's
22 too early for people to actually rely on that
23 feature being in the platform.
24 BY MS. HURST:
25   Q   There are several acronyms in

Page 199

1 self-certify using the CTS?
2   MR. RAGLAND: Objection. Form, outside
3 the scope.
4   THE WITNESS: I'm not sure what you mean
5 by "self-certify."
6 BY MS. HURST:
7   Q   In other words, does it provide the CTS to
8 its hardware partners, let them run it themselves,
9 and declare that they've passed it with some --
10 perhaps by providing some piece of information or
11 otherwise?
12   MR. RAGLAND: Objection to form and scope.
13   THE WITNESS: So I believe that in our
14 agreements with the developers, hardware developers,
15 they're not allowed to use our brand trademarks
16 unless the device is compatible.
17   So if they pass the CTS, then they can go
18 ahead and use those trademarks that represent that
19 it's Android-compatible.
20 BY MS. HURST:
21   Q   And do you run the -- that is, do you,
22 Google, then run the CTS to determine whether it
23 passes, or do you let them run it themselves?
24   MR. RAGLAND: Objection to scope and form.
25   THE WITNESS: The hardware manufacturers

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5 (Pages 198 - 201)

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1 run the tests themselves and they submit the tests
2 back to us.
3 BY MS. HURST:
4   Q   So do you give the hardware manufacturers
5 the source code for CTS?
6   MR. RAGLAND: Same objections.
7   THE WITNESS: I'm not sure whether they
8 have access to the source code for the tests or not.
9 BY MS. HURST:
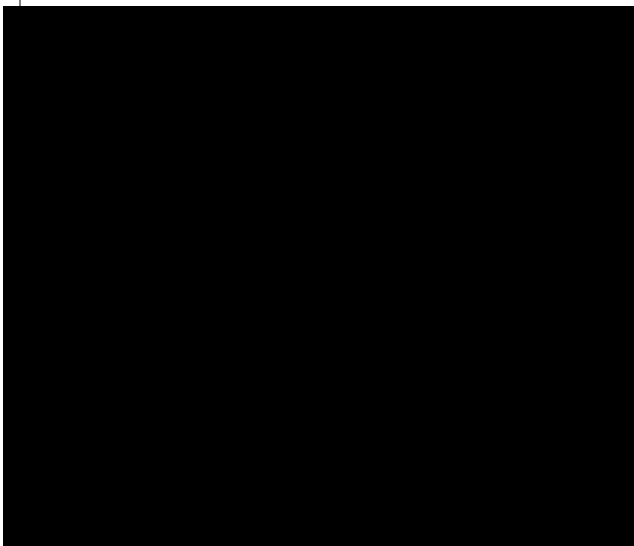
Page 202

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1   MS. HURST: Exhibit 5095 is GOOG-00291608
2 through 291810.
3   (Exhibit 5095 was marked for
4   identification and is attached hereto.)
5 BY MS. HURST:
6   Q   I think it might be a two-sided copy,
7 Mr. Lin, so if you wanted to take the clip off to
8 make it easier to look at, feel free.
9   A   Sure.
10   Q   Do you recognize Exhibit 5095?
11   A   Yes.
12   Q   What is it?
13   A   It's just an update deck for a team
14 offsite.
15   Q   Whose team?
16   A   My team.
17   Q   Is this a deck that you put together?
18   A   No. It's a deck that my leads put
19 together.
20   Q   Under your supervision?
21   A   Yes.
22   Q   And are you the one who presented it or
23 some part of it?
24   A   Each of them presented their portion.
25   Q   So if we look at the page ending 609,

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1 "Introduction & Agenda," @felixlin --
2   A   Yes.
3   Q   -- so that indicates that you gave the
4 introduction and announced the agenda for this
5 presentation?
6   A   Correct.
7   Q   All right. And were you present for
8 this -- the presentation as it's reflected in
9 Exhibit 5095?
10   A   I was there for the first day.
11   Q   On page ending 610, "Agenda," do you see
12 that?
13   A   Yes.
14   Q   Under "Android," there's a series of
15 bullet points with names next to them.
16   Do you see that?
17   A   Yes.
18   Q   And platform programs, who is the person
19 associated with that?
20   A   Unsuk.
21   Q   And who is that?
22   A   He's one of the folks on my team who works
23 with hardware manufacturers.
24   Q   And is that his full name or --
25   A   That's a first name.

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---

1   Q   You're thinking of his last name?
2   A   Yeah, I don't remember his last name. I
3 never use it.
4   Q   All right. And what is platform programs
5 in relation to the Android update as reflected in
6 Exhibit 5095?
7   MR. RAGLAND: Objection. Outside the
8 scope. Objection to form.
9   THE WITNESS: It's, you know, general
10 information, communication about Android platform
11 new releases to hardware manufacturers.

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6 (Pages 202 - 205)

8 (Pages 210 - 213)
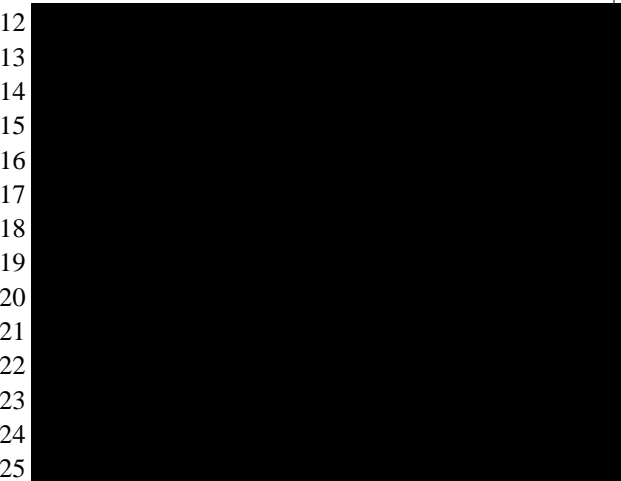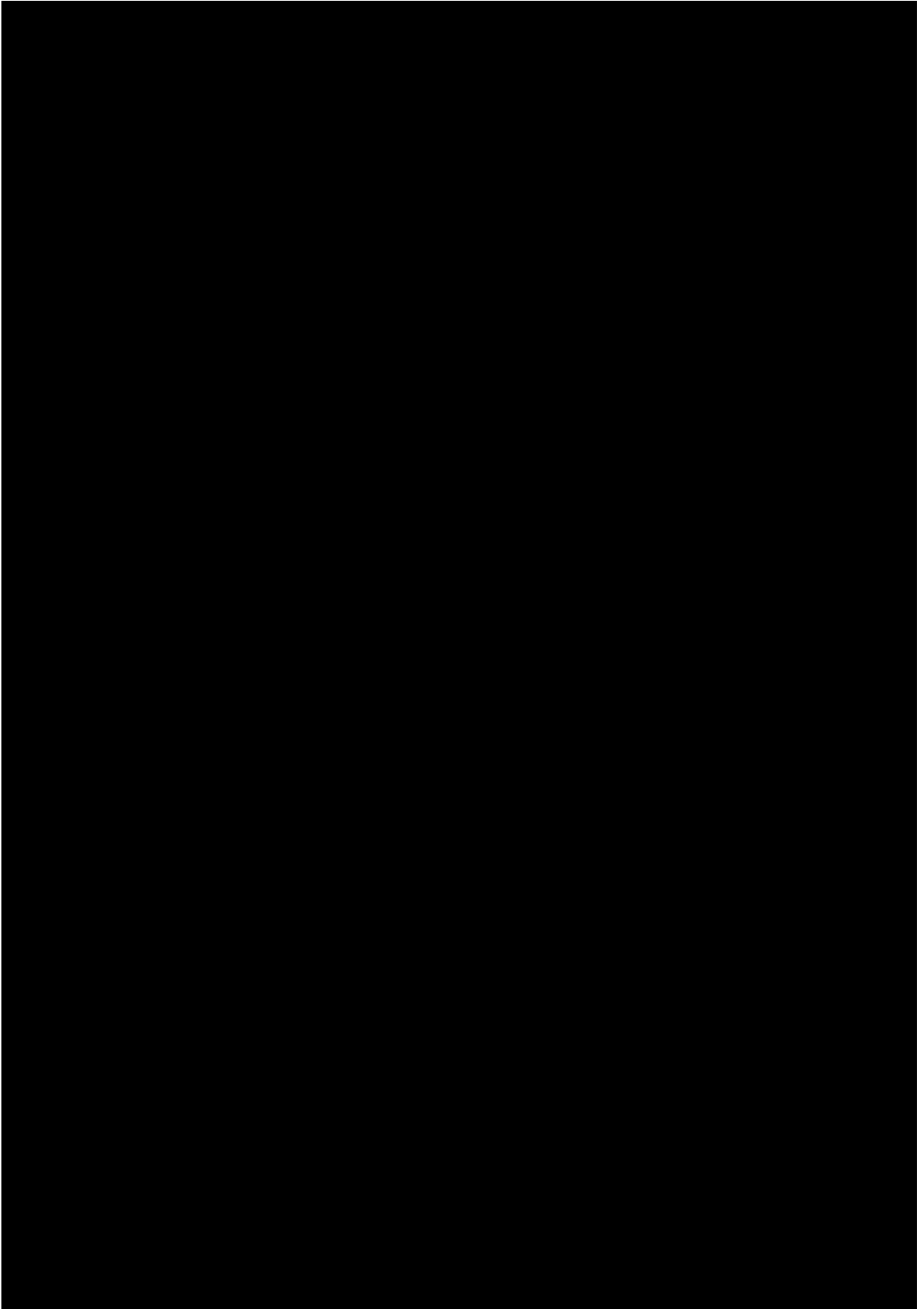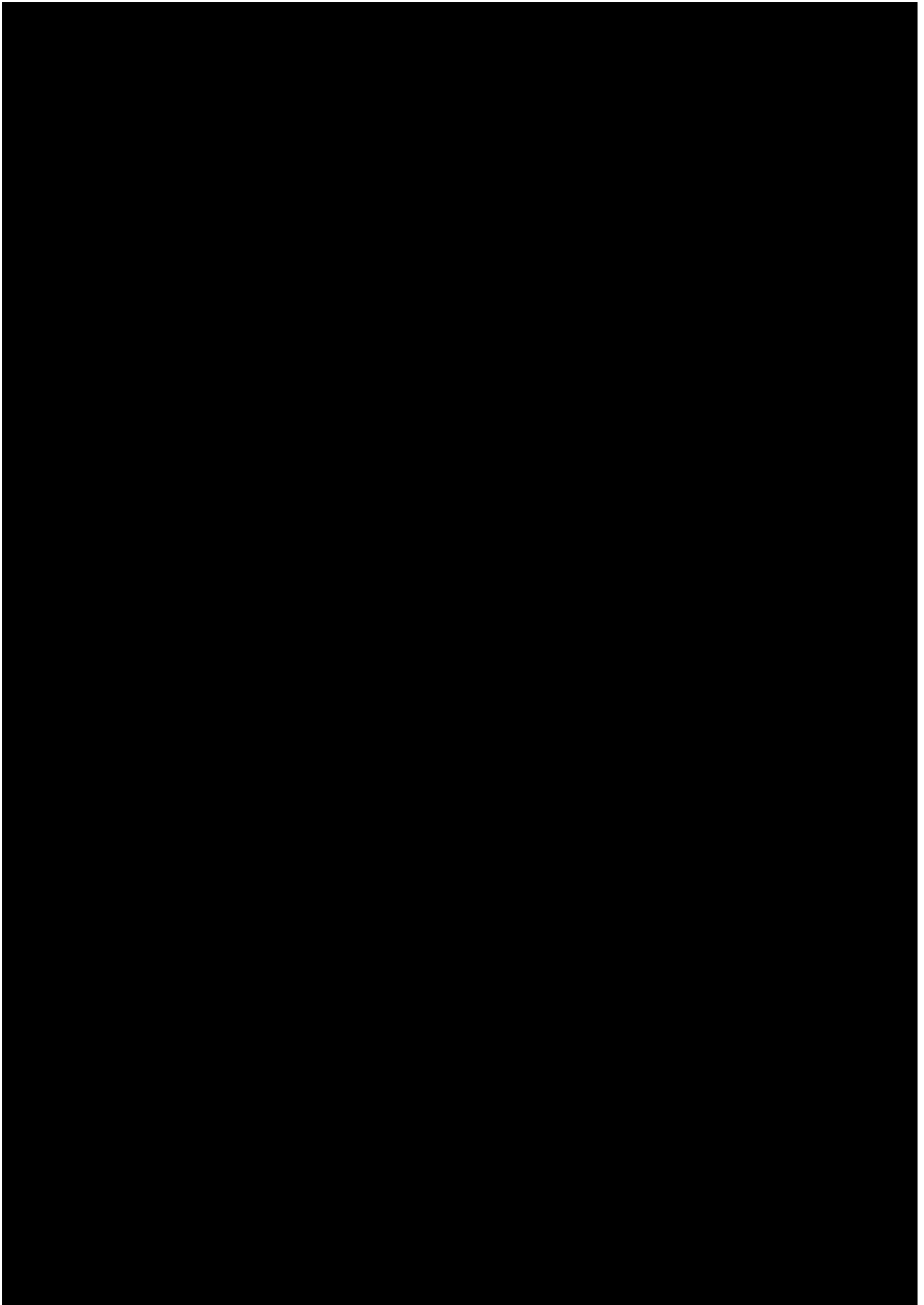
8 BY MS. HURST:

9   Q   Are you familiar generally with the

10 subject of this lawsuit and the allegation that

11 Google improperly copied 37 Java API packages into

12 Android?

13   MR. RAGLAND: Objection to form. Outside

14 the scope of designated topics.

15   THE WITNESS: From what I read in the

16 news, yes.

17 BY MS. HURST:

18   Q   Do you know whether any of those 37 Java

19 API packages are reproduced in Android Auto Version

20 1.0, code named Delorean?

21   MR. RAGLAND: Objection to form. Outside

22 the scope of noticed topics.

23   THE WITNESS: I don't know what those 37

24 APIs are.

25 ///

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1 BY MS. HURST:

2   Q   Is Auto 1.0, code named Delorean, a subset

3 of the Android APIs associated with it?

4   MR. RAGLAND: Objection to form. Outside

5 the scope of noticed topics.

6   THE WITNESS: I don't actually know.

7 BY MS. HURST:

8   Q   Will Android Auto be open source or closed

9 source?

10   MR. RAGLAND: Same objections.

11   THE WITNESS: I don't know for certain.

12 BY MS. HURST:

13   Q   Has that yet been decided?

14   MR. RAGLAND: Same objections.

15   THE WITNESS: I don't know.

16 BY MS. HURST:

17   Q   What is Mr. Thomas's responsibility with

18 respect to Android Auto?

19   A   He is the partner engineering lead,

20 program lead for Android Auto.

21   Q   Does he report up through you?

22   A   Yes.

23   Q   Does he work with the people who are

24 developing Android Auto on the Google side and the

25 people who might use it on the car manufacturer

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9 (Pages 214 - 217)

1 side?
2   MR. RAGLAND: Objection to form.
3   THE WITNESS: He is primarily focused on
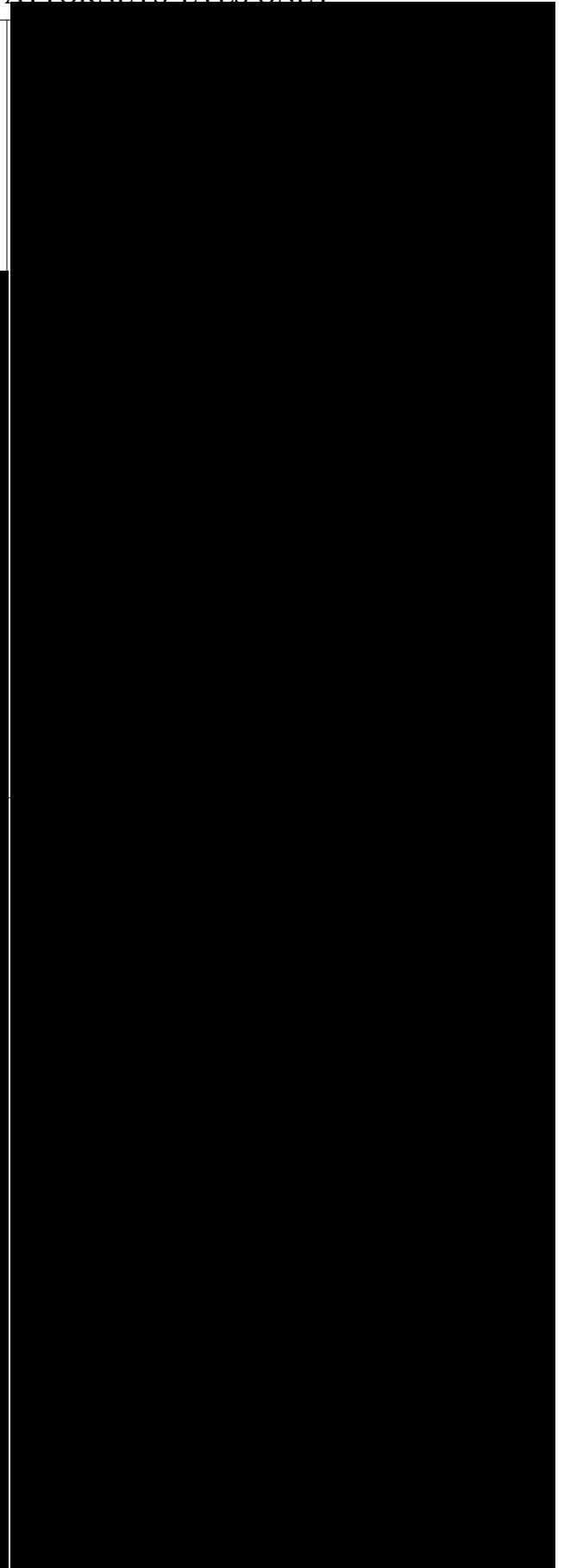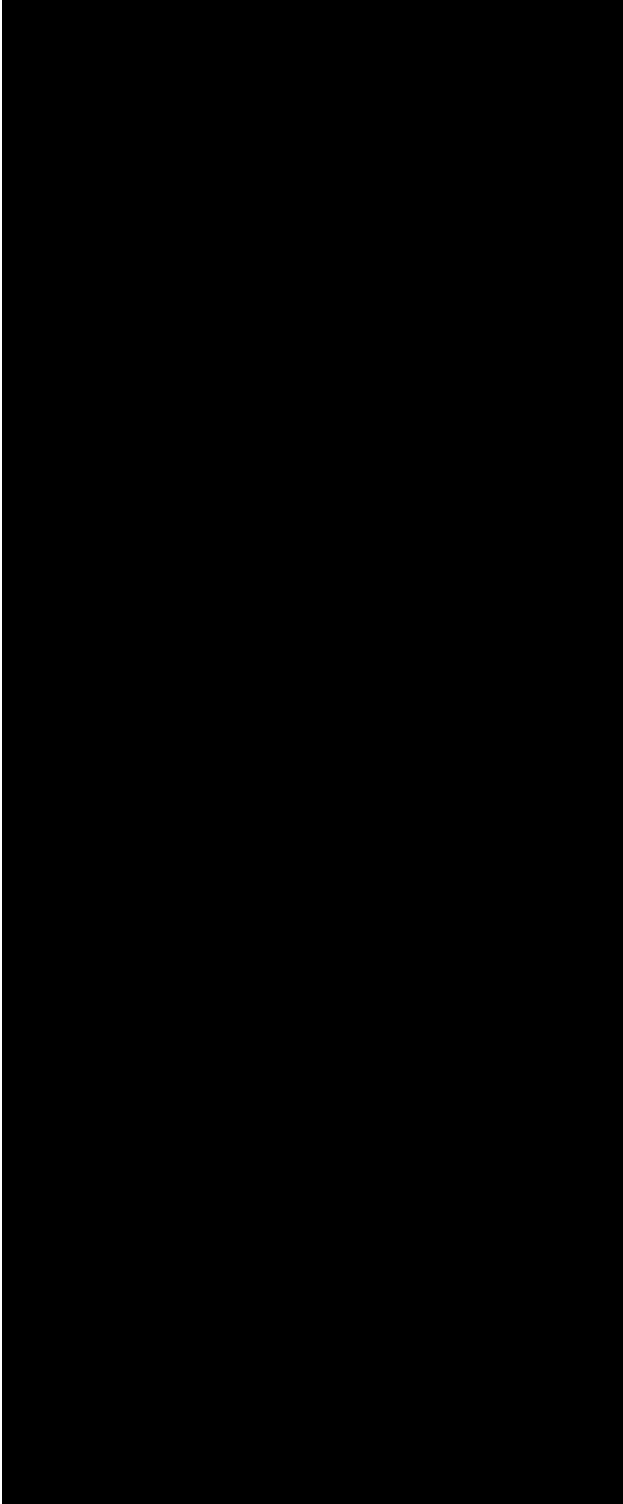4 delivering the software to the auto manufacturers
5 and working with the engineers who are helping the
6 auto manufacturers implement Android Auto, either
7 projected or embedded.
8 BY MS. HURST:

10 (Pages 218 - 221)

1 BY MS. HURST:
2   Q Does Android TV reproduce the -- all or
3 any portion of the 37 Java API packages --
4   MR. RAGLAND: Objection to form.
5 BY MS. HURST:
6   Q   -- that are the subject of this lawsuit?
7   MR. RAGLAND: Objection to form. Outside
8 the scope of noticed topics.
9   THE WITNESS: I don't know whether it does
10 or not.
11 BY MS. HURST:
12   Q Turning to the page ending 690, "Android
13 Wear," what is Android Wear?
14   A Android Wear is Android for wearables,
15 specifically watches.
16   Q Is Android Wear available on anything
17 other than watches?
18   MR. RAGLAND: Objection. Form and scope.
19   THE WITNESS: Did you ask if Android Wear
20 is available on anything besides watches?
21 BY MS. HURST:
22   Q Yes.
23   A Okay. I thought it was just Android.
24   It's only watches right now.
25   Q Is Android Wear open or closed source?

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1   MR. RAGLAND: Objection to form. Outside
2 the scope of designated topics.
3   THE WITNESS: Android Wear is closed
4 source.
5 BY MS. HURST:
6   Q   And does Android Wear include some or all
7 of the Android open source platform APIs?
8   MR. RAGLAND: Objection to form.
9 Objection, outside the scope of designated topics.
10   THE WITNESS: I'm not sure how much of all
11 of Android open source platform it includes.
12 BY MS. HURST:
13   Q   Are all or any of the 37 Java API packages
14 at issue in this suit reproduced in Android Wear?
15   MR. RAGLAND: Objection to form. Also
16 outside the scope of designated topics.
17   THE WITNESS: I don't know.
18 BY MS. HURST:
19   Q   What is the licensing model for Android
20 Wear?
21   MR. RAGLAND: Same objections.
22   THE WITNESS: Android Wear is currently
23 closed source. We distribute all the software for
24 Android Wear devices directly to the hardware
25 manufacturers.

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8   Q Is Android TV open source?
9   MR. RAGLAND: Objection. Scope, form.
10   THE WITNESS: Android is open source. I
11 am not certain whether the additional components
12 that are specific to TV are open source.
13   It's very likely that the components for
14 Android TV require some closed elements that have to
15 be licensed. Things like digital rights management
16 would not be open source.
17 BY MS. HURST:
18   Q Is Android -- does Android TV include all
19 or a subset of the Android open source platform
20 APIs?
21   MR. RAGLAND: Objection to form.
22 Objection. Outside the scope of designated topics.
23   THE WITNESS: I don't know how much of
24 Android open source it contains, but it would
25 certainly contain at least some.

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11 (Pages 222 - 225)

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1 BY MS. HURST:

22   Q   What is Android One?
23   MR. RAGLAND: Objection. Form and scope.
24   THE WITNESS: Android One is a set of
25 phones that we designed for emerging markets.

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1   It's a bit different than pure -- typical
2 Android phones in that we very specifically
3 designated or specified exactly what phones would be
4 supported, and we provided originally the shipping
5 images for those devices.
6   That's different than the way most Android
7 phones are built. Most Android phones, the device
8 manufacturers start from the Android open source
9 platform, and they can do whatever they want to the
10 Android open source platform. They can pick
11 whatever components they want and they ship whatever
12 phone they want.
13   In Android One, we essentially said,
14 "These phones must have these components," a certain
15 set of capabilities, and then we provided the
16 software for it.
17 BY MS. HURST:
18   Q   And generally speaking, what was -- well,
19 were all of those images roughly the same in terms
20 of their capabilities?
21   A   Exactly.
22   MR. RAGLAND: Objection. Objection to
23 form and scope.
24 BY MS. HURST:
25   Q   And what capabilities do the Android One

Page 227

1 images shipped by Google include?
2   MR. RAGLAND: Same objections.
3   THE WITNESS: It was basically the -- a
4 basic phone image for a phone that was targeted at
5 $100.
6 BY MS. HURST:
7   Q   Did it include any of the GMS
8 applications?
9   A   Yes, it did include GMS applications.
10   Q   Which ones?
11   A   The same bundle that everybody includes.
12   Q   Did it also include GPS?
13   MR. RAGLAND: Objection. Form.
14   THE WITNESS: Google Play services?
15 BY MS. HURST:
16   Q   Yes.
17   A   Yes, Google Play services is part of the
18 GMS bundle. I thought GPS as in location services.
19 Sorry.
20   Q   No, my bad. Google Play services.
21   So just to be clear, Android One, the
22 image that was shipped included Google Play services
23 as part of the Google mobile services bundle?
24   A   That's right.
25   Q   Thank you.

Page 228

1   And the Android One phones are targeted
2 more towards emerging markets; is that true?
3   A   That's correct.

Page 229

12 (Pages 226 - 229)

1   THE WITNESS: Generally, yes.
2 BY MS. HURST:
3   Q   And then in the lower right there's a
4 little diagram with a cloud in it.
5   Do you see that?
6   A   Yes.
7   Q   And what does that represent?
8   MR. RAGLAND: Objection to form and scope.
9   THE WITNESS: It's a rough diagram showing
10 flow of information, communication between devices.
11 BY MS. HURST:
12   Q   And in that diagram, there's kind of a
13 series of crossed lines in the center. What does
14 that reflect?
15   MR. RAGLAND: Same objections.
16   THE WITNESS: I think it's just a rough
17 representation of the Weave protocol.
18 BY MS. HURST:
19   Q   Communication?
20   A   Communication.
21   Q   On the left of that cloud diagram, there's
22 "Developer Portal." On the right there's "Mobile
23 Device." There's an element for "Connected Device,"
24 an element for "Cloud."
25   Where, if at all, in this scheme would

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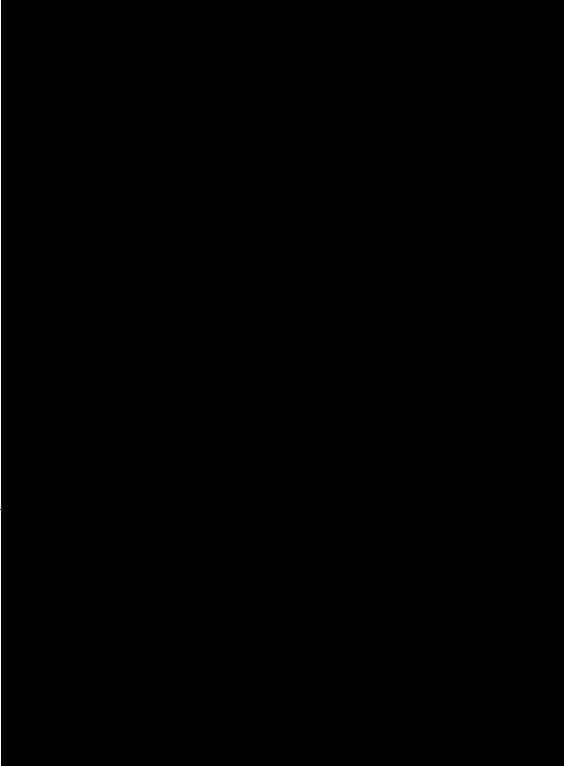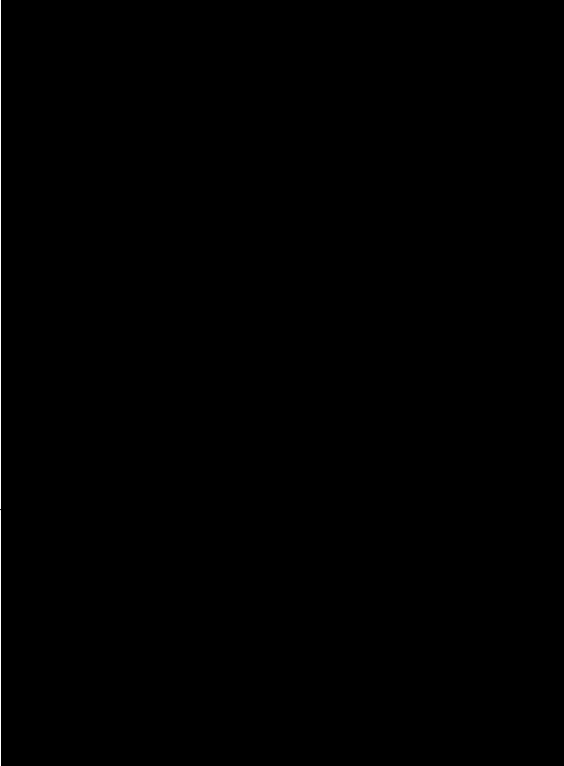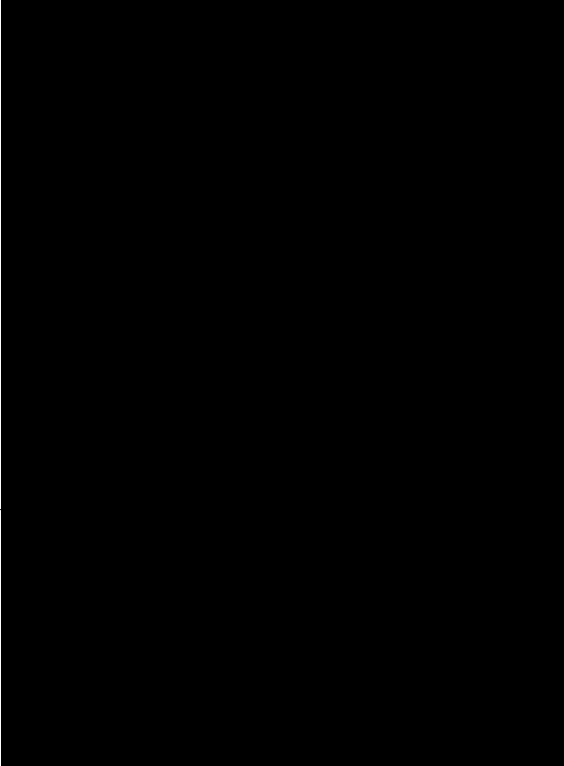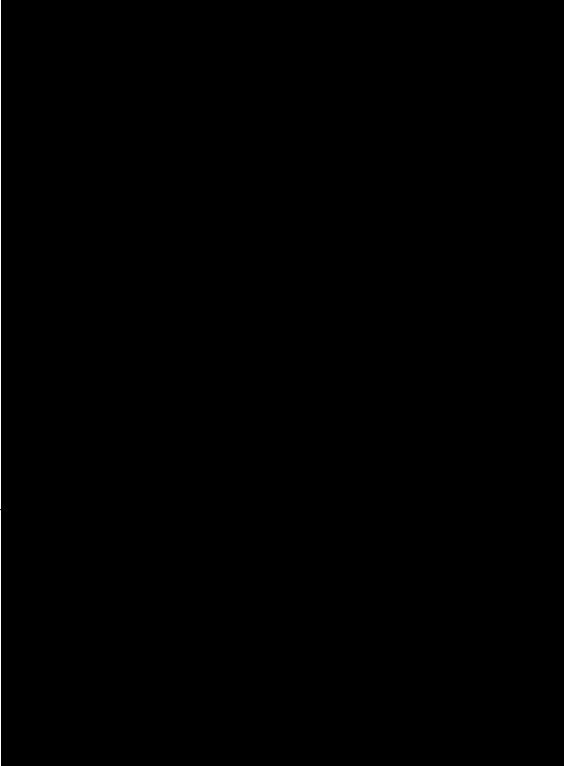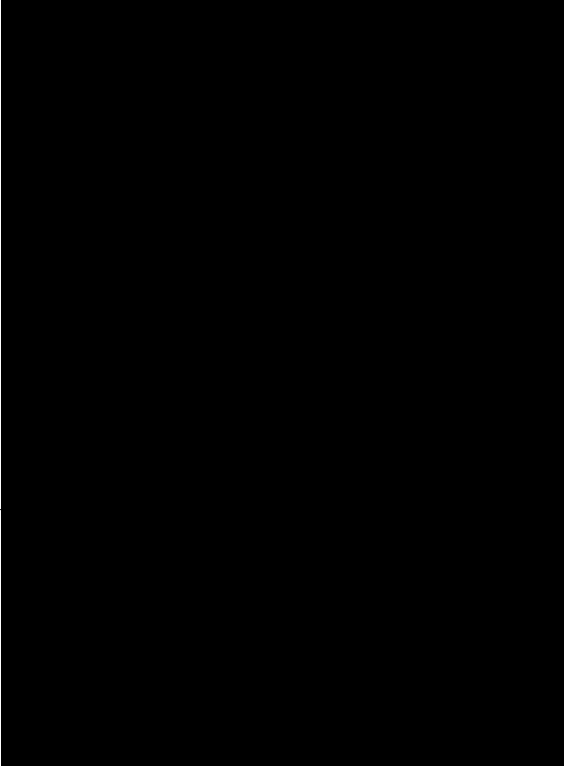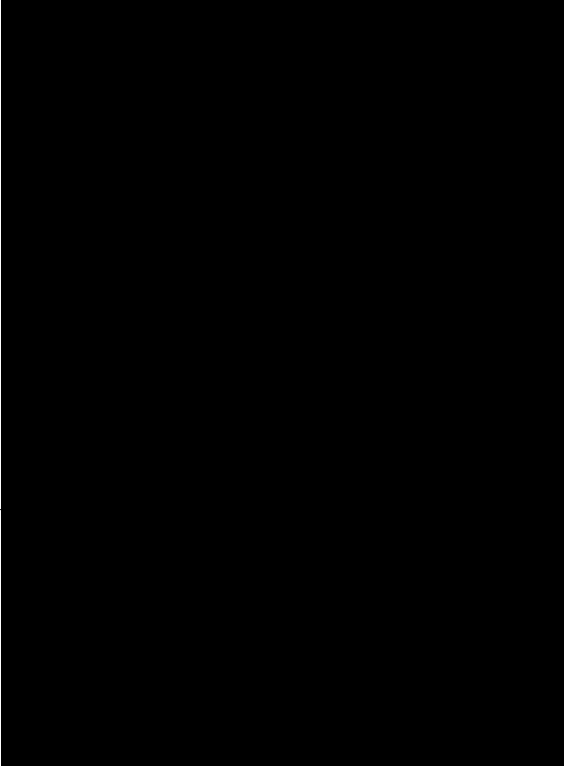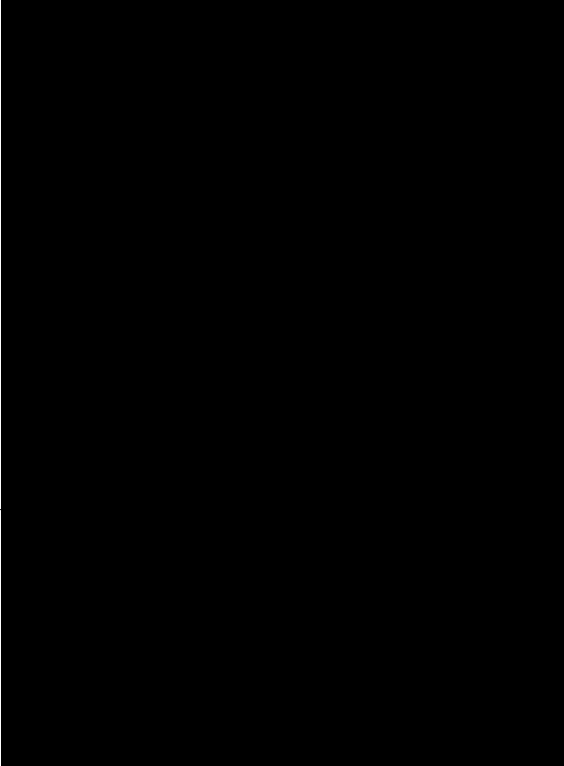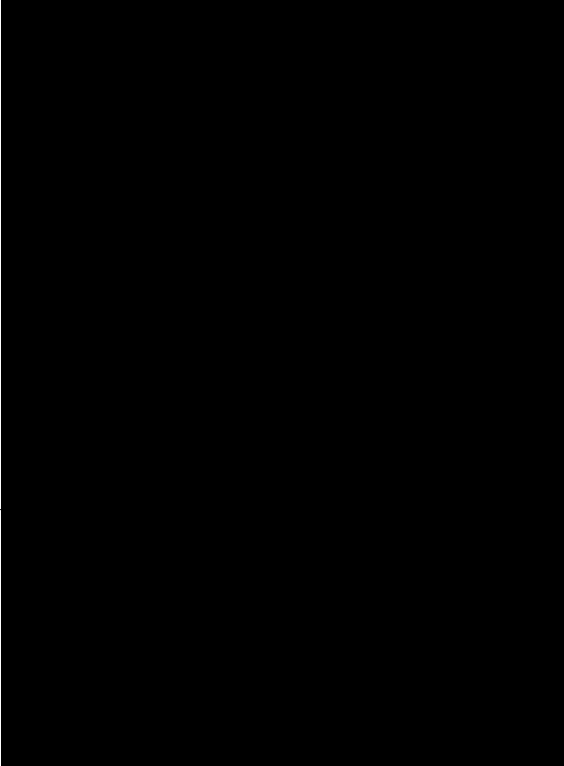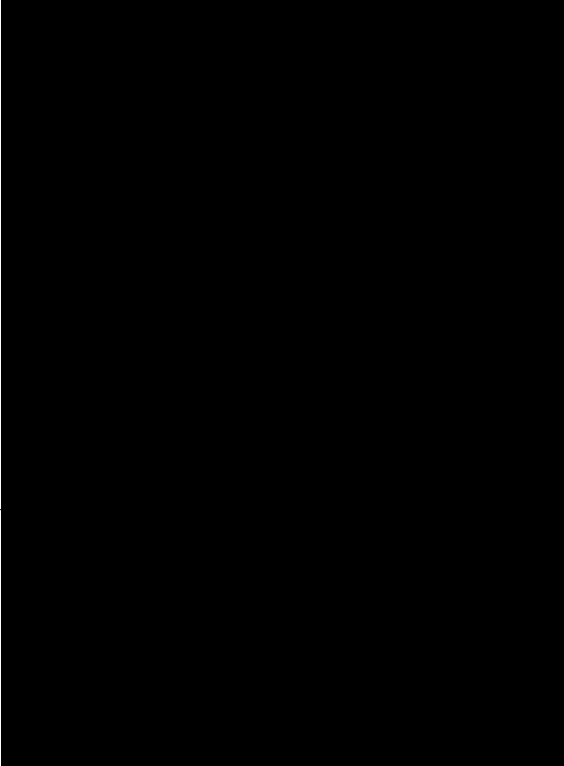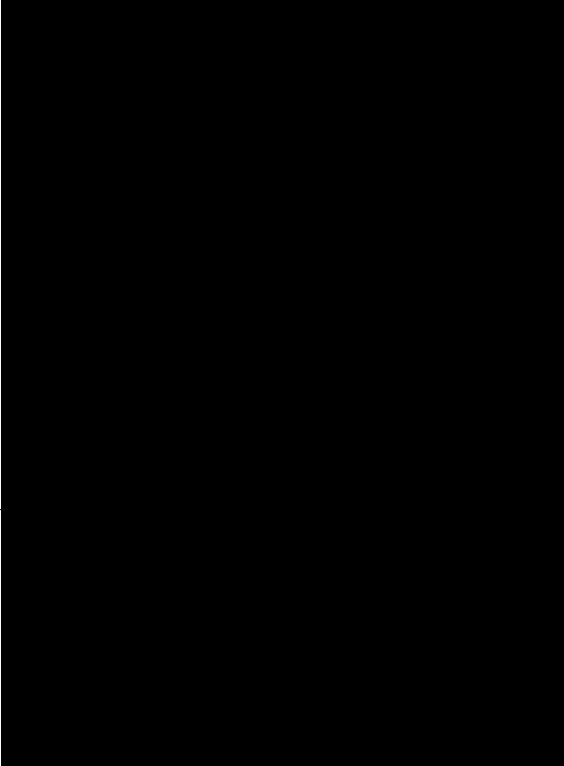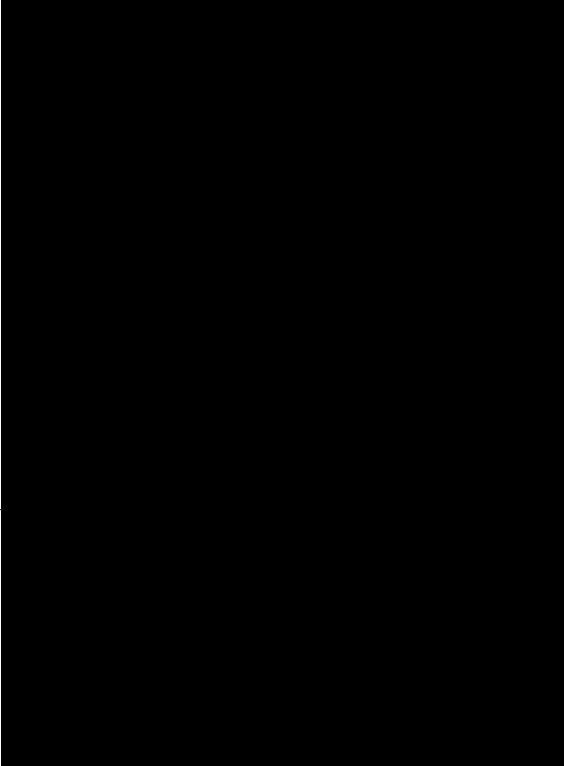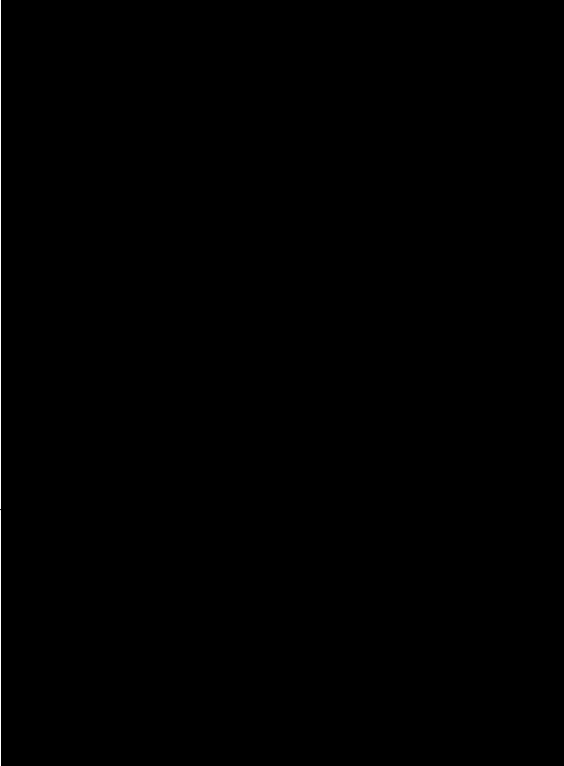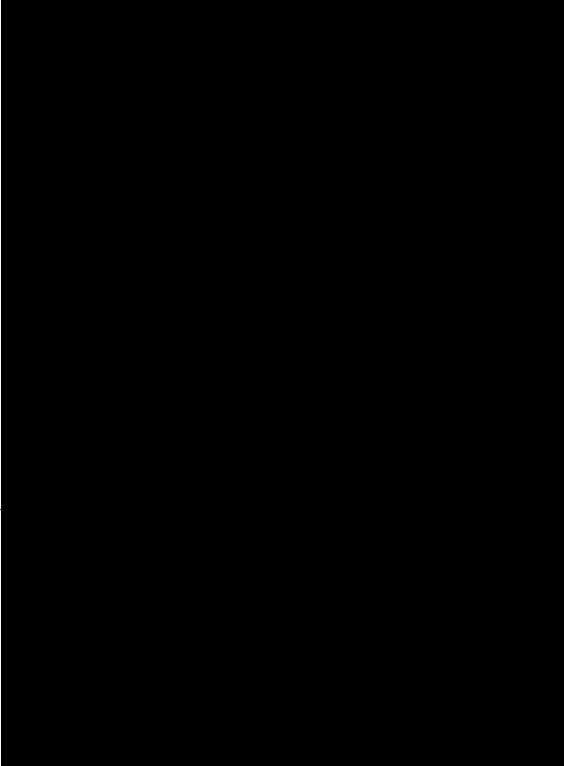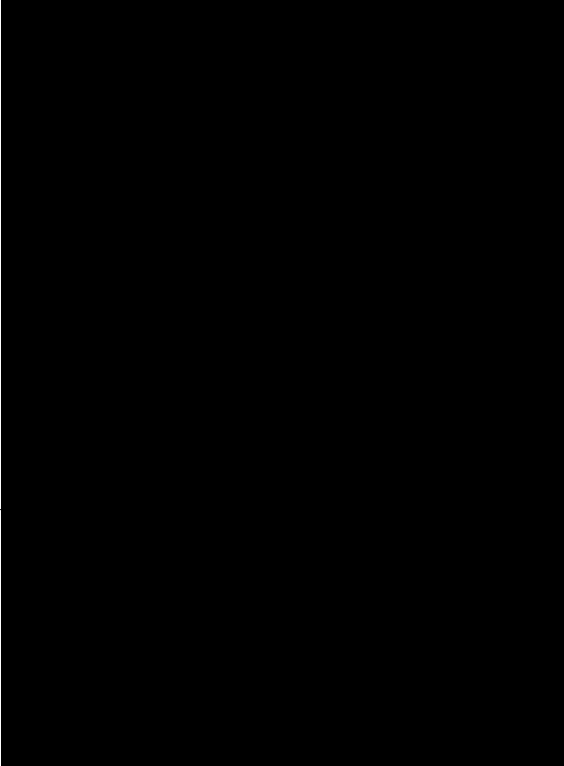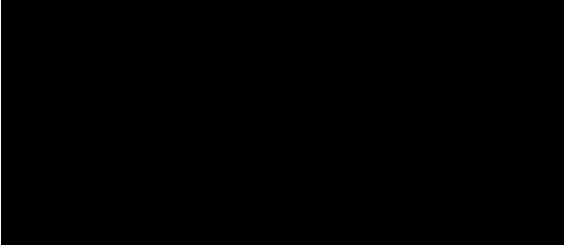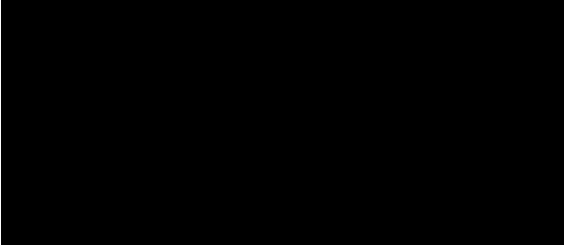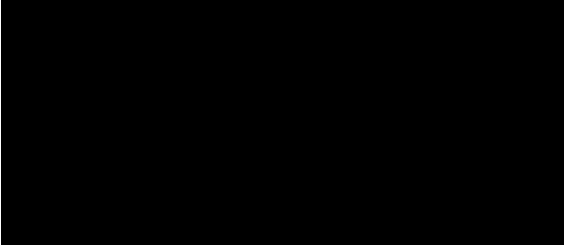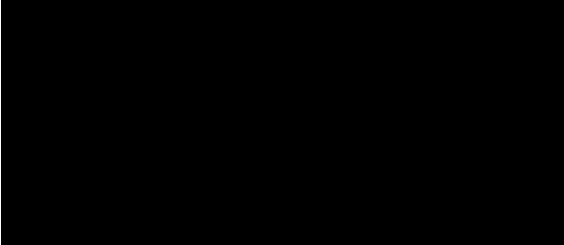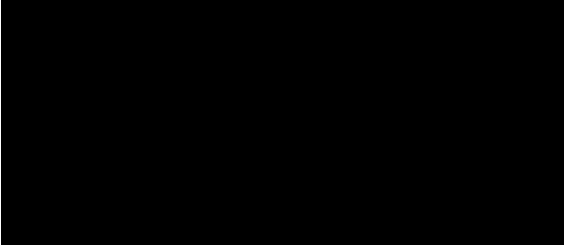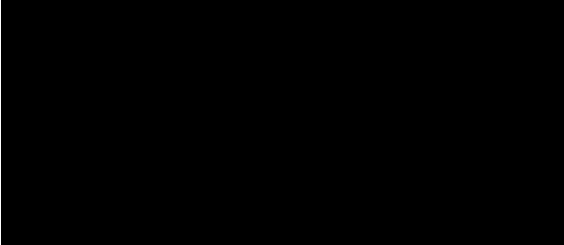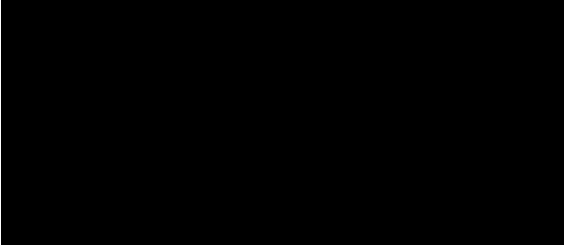
3   Q   Are you familiar generally with the
4 content of this slide?
5   A   Yes.
6   Q   So in the upper right-hand corner there's
7 a little rectangular diagram, do you see that, with
8 "Hardware" at the bottom?
9   A   Yes.
10   Q   Can you explain what that reflects?
11   MR. RAGLAND: Objection. Outside the
12 scope of designated topics.
13   THE WITNESS: It's a block diagram
14 describing where the software exists for Brillo
15 devices.
16 BY MS. HURST:
17   Q   And which part of this diagram reflects
18 what you call Brillo?
19   MR. RAGLAND: Same objections. Also,
20 objection to form.
21   THE WITNESS: Brillo we typically refer to
22 as the entire stack.
23 BY MS. HURST:
24   Q   So including the Weave piece?
25   MR. RAGLAND: Same objections.

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1 Brillo reside?
2   MR. RAGLAND: Objection to form and scope.
3   THE WITNESS: Brillo would only reside on
4 the connected device.
5 BY MS. HURST:
6   Q   So you would call Brillo an embedded
7 operating system; is that right?
8   MR. RAGLAND: Objection to form. Also
9 outside the scope.
10   THE WITNESS: I think some people could
11 think of it that way, yes.
12 BY MS. HURST:
13   Q   This presentation on the page ending 709
14 calls Brillo a low footprint embedded operating
15 system, true?
16   MR. RAGLAND: Objection. Form.
17   THE WITNESS: Yes, it does.
18 BY MS. HURST:
19   Q   Does Google provide any server side
20 software or services or capability to manufacturers
21 of connected devices to receive, process or
22 otherwise make use of the data being reported by the
23 connected devices that use Brillo?
24   MR. RAGLAND: Objection to form. Outside
25 the scope of designated topics.

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13 (Pages 230 - 233)

1   THE WITNESS: There's no -- there's no
2 tracking of the information that is moving between a
3 Brillo device and the cloud or the manufacturer who
4 owns the device, or who produced the device.
5   Brillo is really just a platform that
6 allows for these devices to be able to connect to
7 the network, to expose their capabilities, to be
8 managed, and to provide services to consumers.
9 BY MS. HURST:
10   Q   In the diagram for the Brillo stack in the
11 upper right of 709, it does have a square there for
12 metrics and analytics.
13   Do you see that?
14   A   Um-hum.
15   Q   What capabilities for metrics and
16 analytics are included within Brillo?
17   MR. RAGLAND: Objection. Form and scope.
18   THE WITNESS: I don't actually know the
19 details. I believe that's just a placeholder for
20 allowing the manufacturer of a device to be able to
21 track the devices that are now connected to a
22 network, current status of the device and things
23 like that. And they can decide to store that
24 information and analyze it.
25 ///

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1 BY MS. HURST:
2   Q   So health data, for example?
3   MR. RAGLAND: Objection. Form, scope.
4   THE WITNESS: I don't actually know if
5 it's health data. It's really just a device on the
6 network. And whether they do something more with
7 that or whether they provide facilities in the
8 device to expose more information is up to them. So
9 it's really just a placeholder.
10 BY MS. HURST:
11   Q   So what -- to your understanding, what --
12 if a manufacturer wanted to use Brillo in its
13 connected devices and it wanted to include the
14 capability for exposing and reporting, just for
15 example, health data regarding whether the device
16 was operating correctly or whether it was having
17 problems, what, to your understanding, server side
18 capabilities would be compatible with Brillo in
19 order to collect and analyze such data?
20   MR. RAGLAND: Objection to form. Also
21 outside the scope of designated topics.
22   THE WITNESS: There's actually nothing in
23 the Brillo specifications that is specific about the
24 information that the hardware developer, hardware
25 manufacturer would actually store, manage, or use.

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1   It really is a completely open environment
2 for them to decide what they want to do with.
3 BY MS. HURST:
4   Q   Are your Brillo folks that are working
5 with hardware manufacturers working together with
6 any of the Google cloud platform folks to try to
7 sell both together?
8   MR. RAGLAND: Objection to form. Outside
9 the scope of designated topics.
10   THE WITNESS: No.
11 BY MS. HURST:
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8   MS. HURST: Why don't we take a
9 five-minute break.
10   THE VIDEO OPERATOR: We are off the record
11 at 9:04 a.m.
12   (Recess, 9:04 a.m. - 9:12 a.m.)
13   THE VIDEO OPERATOR: We are back on the
14 record at 9:12 a.m.
15   MS. HURST: All right. Exhibit 5096 is
16 GOOG-00270758 through 61.
17   (Exhibit 5096 was marked for
18   identification and is attached hereto.)
19 BY MS. HURST:
20   Q   Mr. Lin, as in many email threads printed
21 for litigation, you have to read from the bottom up.
22 So the first email in this thread is the one
23 starting on the second page, the lengthy one from
24 Mr. Lockheimer, starting on page 759.
25   Mr. Lin, while you're reviewing the

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14 (Pages 234 - 237)

1 document, Exhibit 5096, first let me ask if you were
2 a recipient on Mr. Lockheimer's original email of
3 Thursday, April 2nd, 2015, at 10:30 a.m.
4   A   Yes, I was.
5   Q   So are you included then -- at that time
6 you were included in the "Android All" alias?
7   A   Yes.
8   Q   What was Mr. Lockheimer's email of
9 April 2nd announcing?
10   MR. RAGLAND: Objection. Form, outside
11 the scope of designated topics.
12   THE WITNESS: It was a reorganization.
13 BY MS. HURST:
14   Q   Were you part of that reorganization?
15   A   Not really.
16   Q   Were any of your employees -- were you or
17 any of your employees who had been reporting to you
18 regrouped as a result of the announcement by
19 Mr. Lockheimer?
20   MR. RAGLAND: Objection to form.
21   THE WITNESS: No.
22 BY MS. HURST:
23   Q   You were already reporting to him?
24   A   I was already reporting to him. Correct.
25   Q   But were -- what was your understanding

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1 then as to what was reorganized in connection with
2 Mr. Lockheimer's announcement in 5096?
3   MR. RAGLAND: Objection to form and scope.
4   THE WITNESS: I'm trying to remember back
5 to this time.
6   This is more of a -- I think a minor
7 reshuffle of some folks.
8   I think, as I look back and I think
9 through what was happening, so for Android One,
10 there was -- there were changes going on, and the
11 engineering lead for Android One had moved on. And
12 so that was one of the primary things that was
13 happening.
14   In -- you know, for Android Auto, there
15 was a bit of reshuffling. The auto team had been
16 split between Android and the geo team, the mapping
17 team. And so folks from the geo team were moving
18 closer to Android, and Android Auto was not -- no
19 longer part of the mapping group.
20   I mean, these were minor -- relatively
21 minor -- you know, people moving around.
22 BY MS. HURST:
23   Q   So Mr. Lockheimer says under the heading
24 "Platforms," "With projects like Brillo and
25 Andromeda, we have a real shot at actually having

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1 one combined platform team at Google. Crazy talk, I
2 know. It's important that we act as one team right
3 away, although we do have multiple different
4 platforms to support (for the time being). Davey
5 Burkey is going to lead this, with Puneester, Ryan
6 Cairns and Zel joining him. The thing I'm super
7 excited about here is that we're going to interleave
8 folks from both platform teams into one, so that
9 it's a true blend (just like Irish coffee is part
10 whiskey and caffeine). I'm sure Davey will send a
11 note explaining more."
12   Now, is that an announcement that Chrome
13 and Android are going to be part of one combined
14 platform team?
15   MR. RAGLAND: Objection to form. Outside
16 the scope of designated topics.
17   THE WITNESS: What that is saying is that
18 there is an engineering team that will provide
19 services to both Chrome OS and Android, but they are
20 part of one central engineering team.
21   So, for example, the engineers who are
22 working on Bluetooth will work on Bluetooth for both
23 Chrome OS and Android. The folks who are working on
24 WiFi will work on WiFi for both Chrome OS and
25 Android.

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1   And because they're part of a common
2 platform team, we eliminate the redundant work that
3 has in the past resulted in two separate WiFi code
4 bases that have different sets of bugs and different
5 sets of capabilities. We essentially want there to
6 be one coherent WiFi solution for Chrome OS and
7 Android.
8 BY MS. HURST:
9   Q   Mr. Lockheimer said, "We have multiple
10 platforms to support (for the time being)."
11   What do you understand that "for the time
12 being" qualification to refer to?
13   MR. RAGLAND: Objection to form, and also
14 outside the scope.
15   THE WITNESS: Well, I mean, platforms, we
16 have, you know, Android TV, there's Android Auto,
17 there's Android Wear, there's Chrome OS. There are
18 many, many different platforms. And some of those
19 can potentially come together.
20   For example, you know, Android TV, Android
21 Wear, Brillo, have many things in common and some
22 things that are different.
23 BY MS. HURST:
24   Q   There are a variety of code words in here.
25   M, that stands for Marshmallow, right?

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15 (Pages 238 - 241)

1   A   Right.
2   Q   D, is that Delorean?
3   A   Where do you see that?
4   Q   In the third paragraph. "I know everyone
5 is busy with M, D, Clutch/Door."
6   Do you see that?
7   A   Interesting. I don't know what D would be
8 because D would be -- oh, D -- okay. D was the --
9 it's not consistent. I think that was for --
10 Android Wear was on its D release in this time
11 frame.
12   Q   What does Clutch/Door refer to?
13   A   That's the code names for an Android Auto.
14   Q   Is Brillo a code name, by the way, or is
15 it a name of a product?
16   A   Google is insane with project names.
17   Brillo is both a project name, it's a
18 platform name, so it's reused in many different
19 ways, unfortunately.
20   Q   Okay.
21   A   I think this is generally talking about
22 the project.
23   Q   What is Andromeda?
24   A   Andromeda is a project to add some of the
25 system UI from Android to Chrome OS. So things like

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1 notifications.
2   You know, if your device is connected,
3 disconnected, or if you get an SMS message, the way
4 those messages pop up on your Android phone is part
5 of like the system notification mechanism.
6   And on Chrome OS we have a different
7 notification mechanism which hasn't been very
8 popular with developers, hasn't really been popular
9 with end users, and doesn't seamlessly work with
10 your phone.
11   So Andromeda -- the goal of Andromeda is
12 to better integrate your Android phone and your
13 Chrome OS laptop. So if your phone has a
14 notification, then it will show up on your laptop at
15 the same time and in the same way. And if you
16 dismiss the notification, it dismisses it on your
17 phone.
18   So it's really bringing those features
19 together.
20   Q   What is Radiance?
21   A   I believe Radiance is higher-end video or
22 media for Android graphics.
23   Q   All right. As we were looking at --
24 Mr. Lockheimer says, "Davey Burkey is going to lead
25 the combined platform team."

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1   And then the next email in this thread is
2 one from Mr. Burke; is that right?
3   A   Yes.
4   Q   His name is actually Dave Burke; is that
5 right?
6   A   Yeah.
7   Q   And you were a recipient of Mr. Burke's
8 email that followed up on Mr. Lockheimer's?
9   A   Yes. I think I got it.
10   Q   So Mr. Burke says, "I remember reading an
11 article in 2009, where Sergey was quoted as saying
12 that Android and Chrome OS would likely converge in
13 the future. Well, some six years later, it would
14 seem we've arrived at the future."
15   Do you see that?
16   A   Yes.
17   Q   So Mr. Burke was expressing the view that
18 the combined platform team was a convergence of
19 Android and Chrome OS, true?
20   MR. RAGLAND: Objection. Form. Also
21 outside the scope of designated topics.
22   THE WITNESS: I don't think so. I think
23 he was referring to the user view that the
24 platforms -- well, the operating systems are
25 converging because of what the user sees, but the

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1 underlying technology is not converging.
2   Chrome OS -- we've been pretty clear about
3 this in the recent news and blog posts as well.
4 Chrome OS is separate from Android.
5   And although we're bringing features of --
6 and capabilities of Android to Chrome OS and
7 features and capabilities of Chrome OS to Android,
8 the user view might be that they are coming
9 together, but the reality is that's superficial, and
10 the fundamental platforms are still different.
11 BY MS. HURST:
12   Q   So under the hood, there will remain
13 differences?
14   A   That's right.
15   MR. RAGLAND: Objection. Form and scope.
16 BY MS. HURST:
17   Q   Mr. Burke says, "Our goal is 'grand
18 unification.'"
19   Do you see that?
20   A   I do.
21   Q   So when Mr. Burke says "grand
22 unification," you understand that to mean taking the
23 best of both platforms for consumers; is that right?
24   MR. RAGLAND: Objection. Form. Also
25 outside the scope of designated topics.

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16 (Pages 242 - 245)

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   THE WITNESS: I think he's referring to
2 grand unification as unification of features and the
3 user experience, not necessarily unification of all
4 of the underlying source code.
5 BY MS. HURST:
6   Q   And Mr. Burke says that the best -- he
7 says, "Our goal is 'grand unification,' combining
8 the best of Chrome OS -- manageability, background
9 updates, fast boot times, security."
10   Do you see that?
11   A   Yes.
12   Q   Do you agree with Mr. Burke that that's
13 the best of Chrome OS?
14   MR. RAGLAND: Objection. Form and scope.
15   THE WITNESS: "Best" is loosely defined
16 here.
17 BY MS. HURST:
18   Q   Is that -- is manageability a
19 user-oriented feature of Chrome OS?
20   MR. RAGLAND: Objection to form. Also
21 outside the scope of designated topics.
22   THE WITNESS: Manageability is a user
23 feature. I think some would argue that it's more of
24 a managed IT feature. So it's one of the things.
25 ///

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1 BY MS. HURST:
2   Q   And focusing on the features of Android
3 that you're going to bring to Chromebooks, the key
4 for that, as expressed by Mr. Burke in this email,
5 dated April 2nd, 2015, is the vibrant app ecosystem,
6 developer/framework APIs, and extensive silicon
7 support, true?
8   MR. RAGLAND: Objection. Form, outside
9 the scope of noticed topics.
10   THE WITNESS: I think the only thing that
11 matters to end users is their ability to run Android
12 apps. I don't think end users care at all about
13 framework APIs and silicon support.
14 BY MS. HURST:
15   Q   Do the framework APIs allow the developers
16 to deliver those apps to the consumers?
17   MR. RAGLAND: Objection to form. Outside
18 the scope of designated topics.
19   THE WITNESS: It's not clear to me. The
20 apps can be created on any set of APIs. Given a set
21 of APIs, most developers can create applications.
22 BY MS. HURST:
23   Q   What does "extensive silicon support" mean
24 in this context?
25   MR. RAGLAND: Same objections.

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1 BY MS. HURST:
2   Q   All right. And Mr. Burke goes on to
3 describe the other half of grand unification,
4 combining the best of Chrome OS "with the best of
5 Android -- the vibrant app ecosystem,
6 developer/framework APIs, and extensive silicon
7 support."
8   Do you see that?
9   A   Yes.
10   Q   Now, as the guy who's the Chrome OS
11 leader, your understanding that these best features
12 of Android from Mr. Burke's perspective are what you
13 will be implementing to improve Chrome OS as the two
14 move towards one another in the consumer's eye, even
15 if underneath the hood they remain somewhat
16 different?
17   MR. RAGLAND: Objection to form.
18 Objection. Outside the scope of designated topics.
19   THE WITNESS: I think that there are --
20 yes, there are features of Android which we are
21 interested in making available to people who buy
22 Chromebooks, and there are features of Chromebooks
23 that people who are using Android phones and tablets
24 would love to have that they don't have today.
25 ///

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1   THE WITNESS: It means that there are
2 already chip manufacturers and -- chip manufacturers
3 and component suppliers who already have written the
4 driver support to enable Android to run on their
5 components.
6 BY MS. HURST:
7   Q   And how does that relate to a Chromebook?
8   MR. RAGLAND: Same objections.
9   THE WITNESS: Today, Chrome OS works on a
10 more limited set of components and system chips,
11 SOCs. And having support for this allows us to run
12 on more hardware which brings down the cost of the
13 devices.
14 BY MS. HURST:
15   Q   All right. Mr. Burke goes on to say,
16 "It's hugely challenging and exciting: One OS from
17 Google, and one way of doing things for our
18 partners."
19   Now, that's more than just a
20 consumer-facing unification he's expressing there,
21 isn't it, Mr. Lin?
22   MR. RAGLAND: Objection to form. Also
23 outside the scope of designated topics.
24   THE WITNESS: Well, I think that he's
25 talking about a vision for consumers.

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17 (Pages 246 - 249)

1   Again, from a consumer standpoint, if the
2 usage is exactly the same, the UI experience is the
3 same, then, you know, we converge on the so-called
4 platform from Google.
5   However, whether we can actually get there
6 on all the hardware that we're currently using is
7 hard to imagine.
8   You know, I think that, for example --
9 just a completely different company, which I'm
10 speculating -- but Apple would like to present there
11 being one OS across all their devices. But the OS
12 that they have on phones is different than the OS
13 that they have on their notebooks. And they can
14 make all the apps try to run across both, but
15 fundamentally the source code underneath is
16 different.
17   And we have a similar situation. We want
18 to present the notion to users that there's one OS,
19 and we might tell them there's one OS because it
20 makes life easier for the consumer. But from a
21 platform standpoint, we have Android focused on
22 mobile devices like phones and tablets, and Chrome
23 OS focused on large form factors like notebooks.
24   And so separate platforms, but the user
25 experience might be the same, and we'll try to

1 present that illusion to the end users.
2 BY MS. HURST:
3   Q   And apart from Apple and Google, you might
4 say Microsoft is trying to do the same, right?
5   MR. RAGLAND: Objection to form and scope.
6   THE WITNESS: Yes.
7 BY MS. HURST:
8   Q   All right. Now, the third email in the
9 thread, that's from Kan Liu? Correct me if I'm
10 pronouncing it wrong.
11   A   That's close enough.
12   Q   Do you know Mr. or Ms. Liu?
13   A   Yes, I do.
14   Q   Who is that?
15   A   He is one of the product managers on
16 Chrome OS.
17   Q   He reports to you?
18   A   He does now.
19   Q   Did he at the time of this email,
20 April 3rd?
21   A   Not in April.
22   Q   When did he come under your wing?
23   A   Just a few weeks ago.
24   Q   So did you receive Mr. Liu's email of
25 April 3rd that was -- added the Chrome OS team to

1 the thread?
2   A   Yes, I did.
3   Q   And Mr. Liu said or wrote, "I was there at
4 the event when Sergey dropped by to give that quote
5 and it's pretty amazing how far we've come in the
6 Chrome OS vision that Sundar laid out for the world
7 that day."
8   Now, you understand that to be a reference
9 to Mr. Pichai, correct?
10   A   Yes.
11   Q   And that event six years ago, 2009, what
12 event was that?
13   MR. RAGLAND: Objection to form.
14   THE WITNESS: I am not certain. I wasn't
15 at that event.
16 BY MS. HURST:
17   Q   Was it some kind of Google developer
18 conference?
19   MR. RAGLAND: Objection. Form.
20   THE WITNESS: I don't think it was that --
21 it wouldn't have been that big because I would have
22 been there. This sounds more like a press -- a
23 smaller press get-together.
24 BY MS. HURST:
25   Q   All right. And what was Mr. Pichai's

1 vision Chrome OS announced in the beginning back in
2 2009?
3   MR. RAGLAND: Objection. Form. Also
4 outside the scope of noticed topics.
5   THE WITNESS: We were really focused on,
6 you know, just making computers better. So we
7 were -- it was all about making a computer a
8 seamless extension of the web.
9 BY MS. HURST:
10   Q   All right. Mr. Liu says, "We went from a
11 duct taped together demo build that was barely
12 running on a (really) crappy netbook to the number
13 one edu" -- E-D-U -- "device and the top rated plus
14 selling devices on Amazon (at one point all top
15 13" -- set off by asterisks -- "rated laptops on
16 Amazon were Chromebooks)."
17   Do you see that?
18   A   Yes.
19   Q   Now, what Mr. Liu describes here, what was
20 your role, Mr. Lin, as part of the group who went
21 from the duct-taped-together build to this
22 top-selling device?
23   MR. RAGLAND: Objection. Form and scope.
24   THE WITNESS: So I was responsible for
25 working with all of the hardware manufacturers who

18 (Pages 250 - 253)

1 built Chromebooks, and responsible for the
2 go-to-market team that set up distribution
3 agreements with the original resellers of ours,
4 retailers, and really responsible for overall
5 ecosystem development.
6 BY MS. HURST:
7   Q   And the number one E-D-U device, that
8 means number one education device, number one device
9 in the education market?
10   A   Sold to schools. Yeah.
11   MS. HURST: Exhibit 5097 is a document
12 entitled "Getting Started with ARC," printed from
13 developer.chrome.com/apps/getstarted_arc."
14   (Exhibit 5097 was marked for
15   identification and is attached hereto.)
16 BY MS. HURST:
17   Q   Mr. Lin, what is developer.chrome.com?
18   A   It's a website which is intended to
19 provide documentation for developers.
20   Q   And that's software developers?
21   A   Yes, primarily software developers.
22   Q   So people who want to write applications
23 to run on Chromebooks, for example?
24   A   It's, yes, developers who want to write
25 applications that run on Chromebooks, but also

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1 hardware manufacturers and component suppliers that
2 are interested in supporting applications.
3   THE REPORTER: I'm sorry. "Component
4 suppliers that" --
5   THE WITNESS: -- are interested in
6 building hardware that supports Chrome OS.
7 BY MS. HURST:
8   Q   I think you said hardware manufacturers
9 and component suppliers who are interested in
10 supporting applications; is that right?
11   A   And for Chrome OS. Right. Sorry.
12   Q   No, I just want to make sure we got it
13 right.
14   All right. So this particular piece of
15 documentation from developer.chrome.com is
16 instructions about how to run your favorite Android
17 apps on Chrome OS, true?
18   MR. RAGLAND: Objection. Form. Also,
19 outside the scope of the noticed topics.
20   THE WITNESS: Yes.
21 BY MS. HURST:
22   Q   Now, is this available to any Chrome
23 developer?
24   MR. RAGLAND: Same objections.
25   THE WITNESS: It's open to anybody.

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1 BY MS. HURST:
2   Q   It's open to the public?
3   A   Right.
4   Q   All right. So turning to the second page,
5 it says, "To test your app, you need three things:
6 Your APK."
7   What's an APK?
8   A   That's the Android application.
9   Q   So that's the Android application that's
10 been compiled into binary form; is that right?
11   A   Yes.
12   Q   And you need a Chromebook, and it
13 specifies which types will work; is that right?
14   A   That's correct.
15   Q   And then the ARC Welder app?
16   A   Yes.
17   Q   And is that a link there to the -- where
18 you can get the app?
19   MR. RAGLAND: Objection. Form, scope.
20   THE WITNESS: It should be. I can't tell
21 for certain, but yes.
22 BY MS. HURST:
23   Q   Okay. All right. Now, it says, "Test
24 your app. Open ARC Welder, attach your APK, and
25 select your options. Click Launch App to test your

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1 app. When testing, file a bug if something doesn't
2 work, or find us on Stack Overflow for help."
3   Do you see that?
4   A   Yes.
5   Q   So on Android, the application binary
6 makes -- takes advantage of a compiler that at
7 different times has been called the Dalvik or the
8 Android run time; is that right?
9   MR. RAGLAND: Objection. Scope and form.
10   THE WITNESS: I believe so. I haven't
11 written any applications for Android so --
12 BY MS. HURST:
13   Q   So ARC Welder works with -- I want to make
14 sure I understand this -- pre-compiled code; it's
15 already been compiled for use with Android run time?
16   MR. RAGLAND: Objection to form. Outside
17 the scope of designated topics.
18   THE WITNESS: I personally haven't tried
19 it, but conceptually I believe that's correct.
20 BY MS. HURST:
21   Q   And then -- so what I'm trying to
22 understand is how an application compiled for use
23 with an Android run time can run on the Chrome
24 operating system.
25   MR. RAGLAND: Same objections.

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19 (Pages 254 - 257)

 1 BY MS. HURST:
 2   Q   Can you help?
 3   A   I don't know the low-level engineering
 4 details for how that magic is performed.
 5   Q   So do you know then whether the app run
 6 time for Chrome does or doesn't include the Android
 7 run time?
 8   MR. RAGLAND: Same objections.
 9   THE WITNESS: I don't know. I would
10 only -- I would be just guessing.

20 (Pages 258 - 261)

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21 (Pages 262 - 265)

22 (Pages 266 - 269)
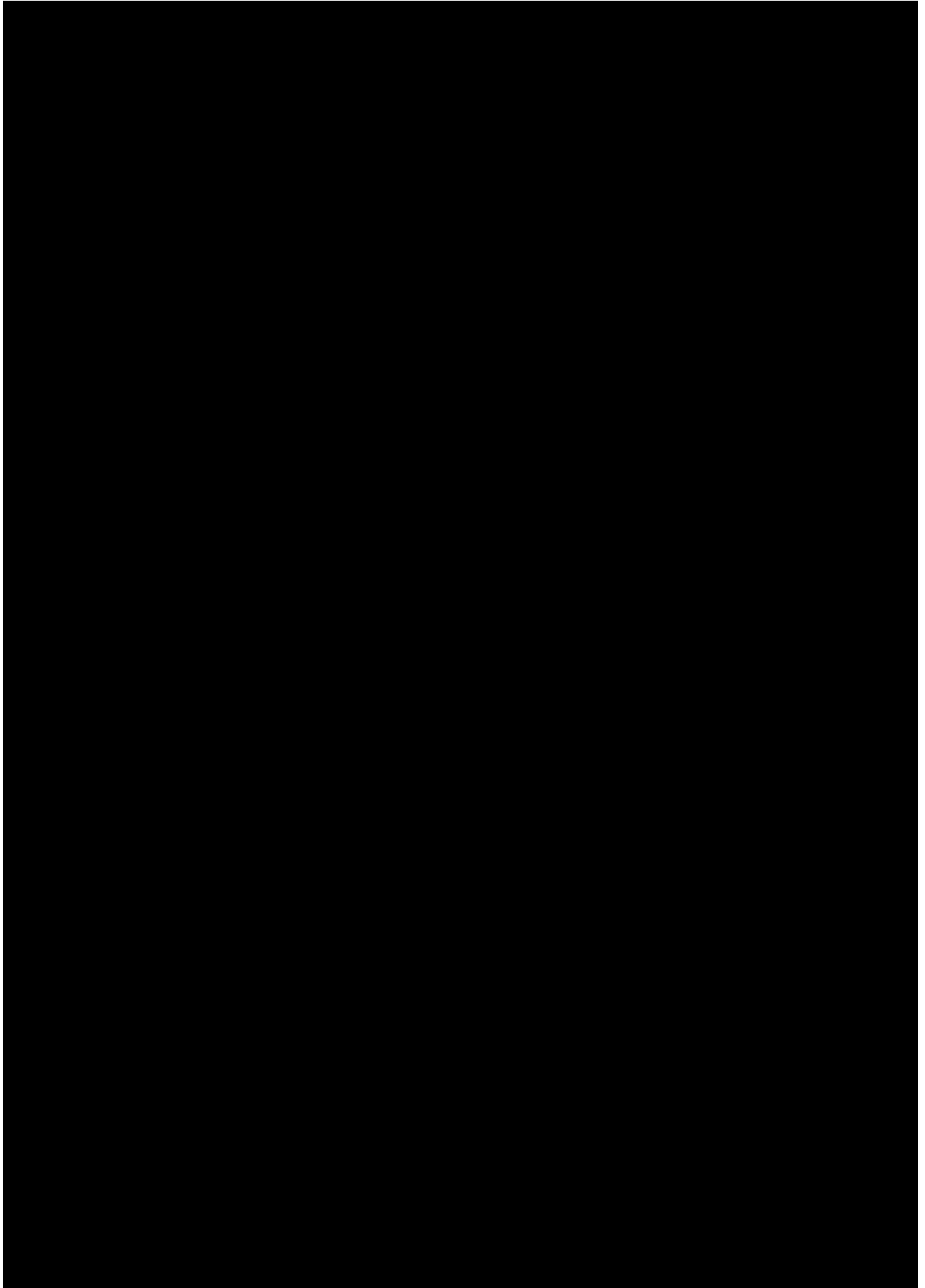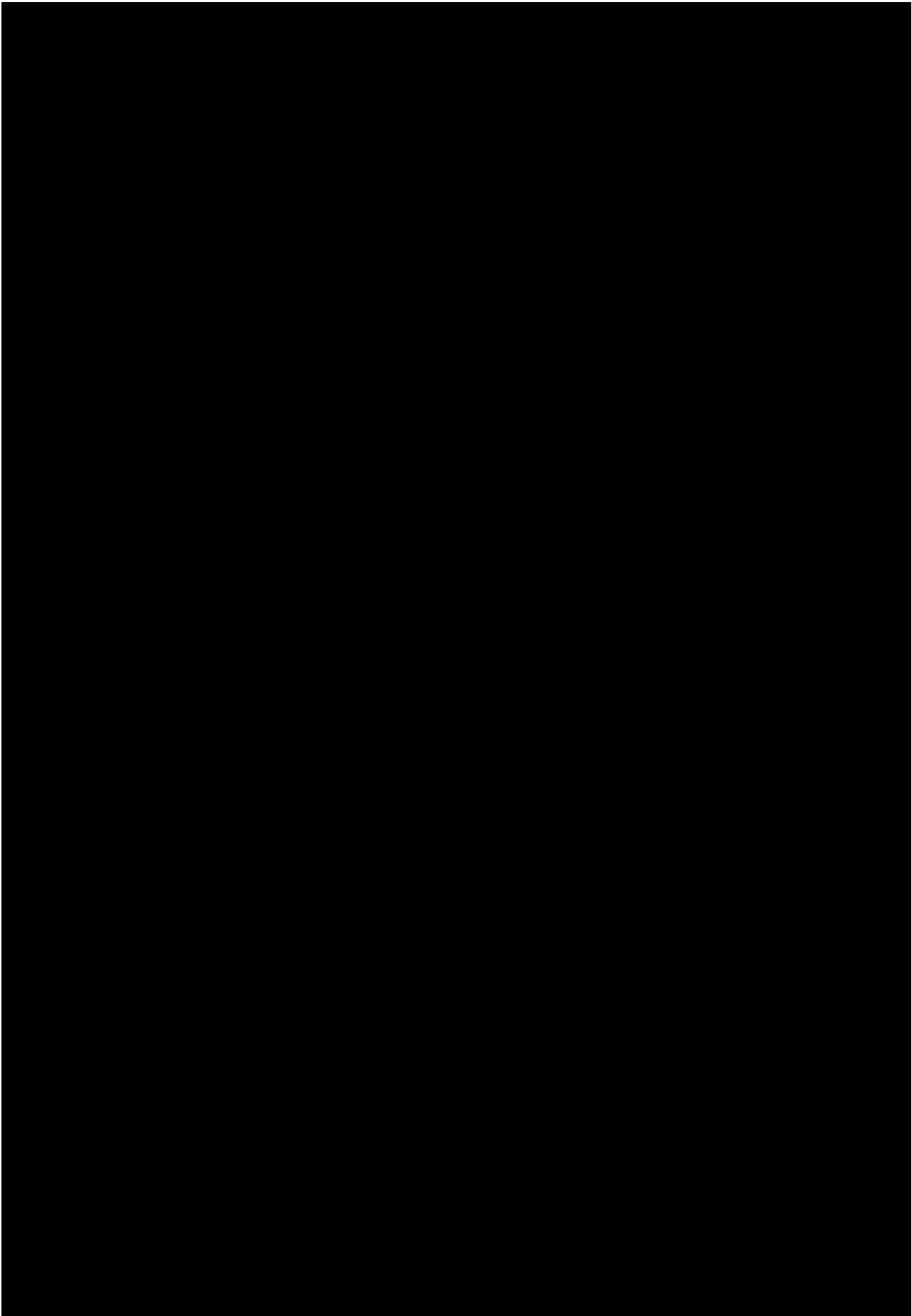
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23 (Pages 270 - 273)

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

24 (Pages 274 - 277)

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14   MS. HURST: Why don't we take our second
15 and last break of the morning.
16   MR. RAGLAND: All right.
17   THE VIDEO OPERATOR: We are off the record
18 at 10:11 a.m.
19   (Recess, 10:11 a.m. - 10:21 a.m.)
20   THE VIDEO OPERATOR: We are back on the
21 record at 10:21 a.m.
22   (Exhibit 5100 was marked for
23   identification and is attached hereto.)
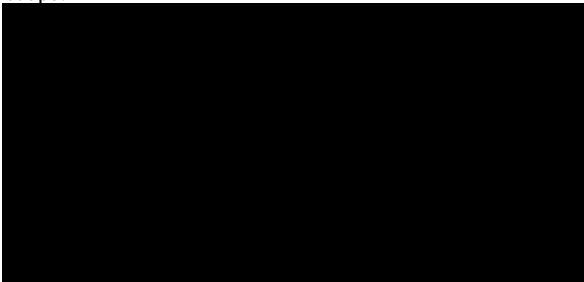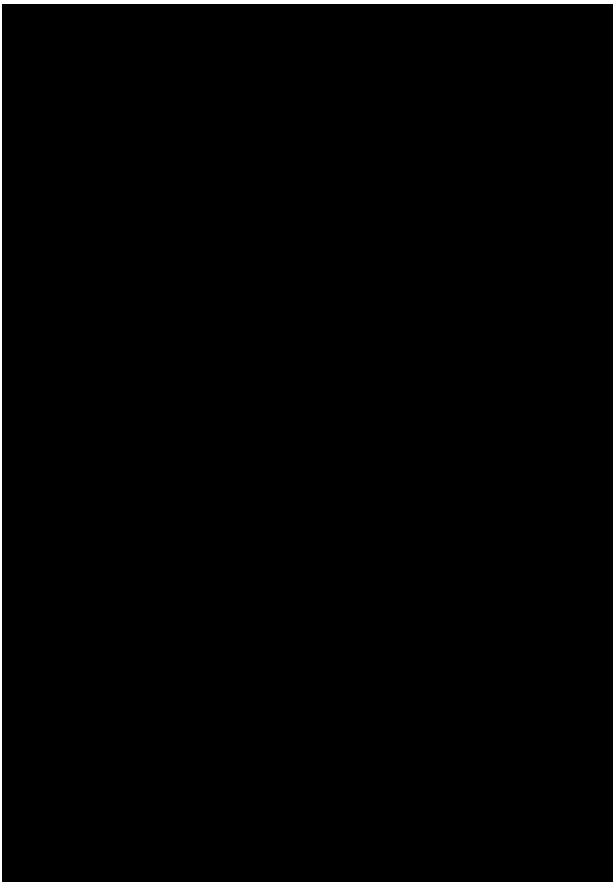
25 (Pages 278 - 281)

25   Exhibit 5101 is a PowerPoint, or I guess

1   A Yes.
2   Q Is Cronut the same thing as Weave or is it
3 different?
4   MR. RAGLAND: Objection. Form and scope.
5   THE WITNESS: I am not certain. I've
6 heard -- it's a project name. It's not a protocol.
7 I believe it's a project name, and it was probably a
8 reference to what is now known as Brillo. It was
9 probably an internal name for Brillo before it was
10 announced.
11 BY MS. HURST:
12   Q So it's your understanding that Cronut
13 project was an earlier name for Brillo?
14   MR. RAGLAND: Objection. Form and scope.
15   THE WITNESS: I'm guessing. Just looking
16 at this deck, I think it is, but I wasn't that close
17 to the project at that time. But I believe it's a
18 project name and not a protocol.
19   MS. HURST: Exhibit 5102 is GOOG-00251200.
20   (Exhibit 5102 was marked for
21   identification and is attached hereto.)
22 BY MS. HURST:
23   Q And this is a slide deck, Mr. Lin,
24 entitled "Android On for the Internet of Things."
25   Do you see that?

1 maybe not. Let me go back. It is a slide deck with
2 Bates number GOOG-00251037 through 1063, entitled
3 "Android, The Center of All Your Devices."
4   (Exhibit 5101 was marked for
5   identification and is attached hereto.)
6 BY MS. HURST:
7   Q Now, Mr. Lin, in looking through this
8 presentation, do you recognize it, or any portion of
9 it?
10   A It's the first time I've seen this deck.
11 But as I leaf through it, I've seen some of the
12 slides in various forms, I think. Yes.
13   Q All right. Let's focus first on the slide
14 ending in 41, 041, entitled "Android and devices
15 today."
16   A Okay.
17   Q Is that a diagram you're familiar with?
18   A First time I've seen it.
19   Q Which parts of this slide deck have you
20 previously seen, or are you otherwise familiar with?
21   A I've seen some of the research on Apple's
22 HomeKit, Samsung SmartThings. I've seen slide 052,
23 053, 054, 055.
24   Q There's a reference on 054 to Cronut.
25   Do you see that?

1   A I do.
2   Q And do you recognize all or any portion of
3 this slide deck?
4   A So I have -- I'm familiar with some of the
5 content. I haven't seen this deck. I have seen
6 some of the bullets, some of the content. Most of
7 the slides I have not seen. I have seen forms of
8 205, 206.
9   Q Do you have any understanding of what
10 Android On refers to?
11   MR. RAGLAND: Objection. Form and scope.
12   THE WITNESS: I believe Android On was the
13 aborted marketing name for Brillo.
14 BY MS. HURST:
15   Q All right. If you could turn to the page
16 202, and it's entitled "Android On devices."
17   Do you see that?
18   A Um-hum.
19   Q And it talks about "Two ways to build your
20 devices: Full stack (Brillo) or 'core services' SDK
21 (Brillette)."
22   And there's a reference on this slide to
23 GCD. Do you understand what that's an acronym for?
24   MR. RAGLAND: Objection. Form and scope.
25   THE WITNESS: I believe GCD -- I'm not

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1 sure if the exact acronym is correct, but I think
2 it's Google cloud device, which essentially is the
3 communications protocol for the predecessor of
4 Weave.
5 BY MS. HURST:
6   Q   So have you ever understood Android On to
7 be kind of a branding scheme for certifying Brillo
8 compatibility?
9   MR. RAGLAND: Objection to form and scope.
10   THE WITNESS: The reason I hesitate is
11 there's a -- it's very complicated.
12   One of the reasons the marketing name was
13 aborted was because there were implications in the
14 name that were not part of the goals of the project,
15 which is why Brillo doesn't have "Android" in its
16 name.
17   The Android piece of it was in the name
18 because we wanted people to recognize that one of
19 the benefits to developers and hardware
20 manufacturers is that the components they were using
21 for these already work with Android. But that's not
22 a user benefit.
23   So that's why this name isn't what we've
24 gone to market with.
25 ///

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1 BY MS. HURST:
2   Q   Is there also an implication in using the
3 Android name that the source will be open that was
4 perhaps incompatible with the Brillo goals?
5   MR. RAGLAND: Objection to form and scope.
6   THE WITNESS: I mean, there's lots of
7 reasons why we don't use the Android name in Brillo.
8   But the goal you mentioned is actually not
9 the case. We don't -- like, it's not clear whether
10 it will be open source or closed source. We don't
11 run the full Android framework for connected
12 devices.
13   There's lots of things that having Android
14 in the name implies that's actually not true of
15 Brillo.
16   So this is an early deck. The content and
17 the goals are still consistent, but the name implies
18 many things that are not actually true.
19 BY MS. HURST:
20   Q   All right. Sticking with this page 202
21 under "Turnkey" -- well, first of all, is there
22 still a plan to have a full stack Brillo and a core
23 services SDK, a lighter version?
24   MR. RAGLAND: Objection. Form and scope.
25   THE WITNESS: So there is today.

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1   Full stack actually includes the physical
2 hardware. So there are small boards that actually
3 have sets of components wired together appropriately
4 so the thing just works. And you can attach it to a
5 door lock and make the door lock connect to the web
6 and be able to control the door lock without having
7 to really think about it.
8   Or device manufacturers can build their
9 own hardware, and then they have to deal with making
10 the software work on their hardware. But the
11 communication protocols would work.
12 BY MS. HURST:
13   Q   And what libraries from the Android
14 platform are included in this Turnkey Brillo as it's
15 reflected here on 202?
16   MR. RAGLAND: Objection the form and
17 scope.
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28 (Pages 290 - 293)

29 (Pages 294 - 297)

1 the specific subject of Android for Work?
2   MR. RAGLAND: Objection to form and scope.
3   THE WITNESS: Not from a licensing
4 standpoint. Android for Work is more of a packaging
5 of a set of features for marketing purposes.
6   So there may be marketing specific
7 agreements about using Android for Work as a brand
8 or, you know, other marketing-related efforts.

10   Q   Are you familiar with Android for Work?
11   A   I am.
12   Q   What is it?
13   MR. RAGLAND: Objection to scope.
14   THE WITNESS: It's Android focused on
15 features for enterprise.
16 BY MS. HURST:
17   Q   And is that -- is it the same as the
18 Android open source platform or is it somehow
19 different?
20   MR. RAGLAND: Objection to form and scope.
21   THE WITNESS: It's a higher set of
22 features built on top of Android open source.
23 BY MS. HURST:
24   Q   And are those features open source or are
25 they licensed on a commercial basis?

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17 BY MS. HURST:
18   Q   Are you aware of any negotiations,
19 agreements or contracts with Apple pertaining to the
20 distribution of Google services or Google
21 applications for IOS?
22   A   Yes.
23   Actually, I think I forgot to mention, but
24 as part of the prep for the deposition, I did talk
25 to the lead engineer who is managing our IOS apps to

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1   MR. RAGLAND: Same objections.
2   THE WITNESS: They would be available open
3 source.
4 BY MS. HURST:
5   Q   Are they presently available on an open
6 source basis?
7   A   Yes.
8   Q   What is the licensing model for Android
9 for Work?
10   MR. RAGLAND: Objection to form and scope.
11   THE WITNESS: Android for Work is included
12 in Android open source.
13 BY MS. HURST:
14   Q   Is there a certification program or other
15 set of requirements associated with licensing or
16 distribution of Android for Work?
17   MR. RAGLAND: Objection to form.
18   THE WITNESS: Nothing in addition to just
19 Android compatibility. So there are specific
20 interfaces and features that are part of Android
21 open source, which are -- were intended specifically
22 for Android for Work, but it's part of the base
23 platform.
24 BY MS. HURST:
25   Q   And does Google enter into agreements with

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1 find out more about what we do for IOS.
2   Q   All right. I'm interested in the
3 negotiations or contracts as opposed to the
4 technical infrastructure --
5   A   Okay.
6   Q   -- with Apple pertaining to the
7 distribution or licensing of Google services or
8 applications on IOS.
9   Do you know anything about that?
10   A   Yes.
11   Q   Okay. What do you know?
12   A   Basically we were an Apple developer. We
13 have an iTunes account, and we take the Google apps
14 and we publish them through the app store.
15   Apple has to approve those apps, and when
16 they do, they give us a cert to sign the app and
17 distribute it through their app store.
18   We sign up as an Apple developer, so
19 there's an Apple developer program agreement. You
20 know, we basically sign up to their standard
21 agreement. We don't negotiate any -- anything
22 special.
23   And then there's a separate agreement to
24 use the X code developer environment in their SDK to
25 actually build the apps to run on IOS.

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30 (Pages 298 - 301)

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1   So we signed that agreement, and we used
2 their SDK to build the IOS versions of our
3 applications.
4   Q   Is there any agreement between Google and
5 Apple that relates to revenue sharing associated
6 with advertising?
7   MR. RAGLAND: Objection to form and scope.
8   THE WITNESS: I've never seen one.
9 BY MS. HURST:
10   Q   Okay. Do you know whether there is one
11 way or another?
12   MR. RAGLAND: Same objections.
13   THE WITNESS: I don't know.
14 BY MS. HURST:
15   Q   Have you seen published reports that
16 Google pays Apple a billion dollars a year to be the
17 search carrier or search service providing on IOS?
18   MR. RAGLAND: Same objections.
19   THE WITNESS: I've seen news reports that
20 Google pays for search traffic from Apple.
21 BY MS. HURST:
22   Q   You've seen reports that Google pays a
23 billion dollars a year, right?
24   MR. RAGLAND: Objection to form and scope.
25   THE WITNESS: I haven't seen the amounts.

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8   I, FELIX LIN, do hereby declare under
9 penalty of perjury that I have read the foregoing
10 transcript; that I have made any corrections as
11 appear noted, in ink, initialed by me, or attached
12 hereto; that my testimony as contained herein, as
13 corrected, is true and correct.
14   EXECUTED this _____ day of _____,
15 2015, at _____, _____.
16   (City)   (State)
17
18
19   _____
20   FELIX LIN
21
22
23
24
25

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1 BY MS. HURST:
2   Q   Do you have any knowledge as to whether
3 there is an agreement providing for such payments or
4 as to the amount of those payments?
5   MR. RAGLAND: Same objections.
6   THE WITNESS: I have not.
7   MS. HURST: I think that brings us to
8 11:00 a.m.
9   MR. RAGLAND: All right. This will
10 conclude the deposition of Mr. Lin in both his
11 personal and 30(b)(6) capacity.
12   THE VIDEO OPERATOR: We are off the record
13 at 10:59 a.m. Thank you.
14   (TIME NOTED: 10:59 a.m.)
15   --o0o--
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1   I, the undersigned, a Certified Shorthand
2 Reporter of the State of California, do hereby
3 certify:
       That the foregoing proceedings were taken
4 before me at the time and place herein set forth;
5 that any witnesses in the foregoing proceedings,
6 prior to testifying, were administered an oath; that
7 a record of the proceedings was made by me using
8 machine shorthand which was thereafter transcribed
9 under my direction; that the foregoing transcript is
10 a true record of the testimony given.
       Further, that if the foregoing pertains to
11 the original transcript of a deposition in a Federal
12 Case, before completion of the proceedings, review
13 of the transcript [x] was [ ] was not requested.
14   I further certify I am neither financially
15 interested in the action nor a relative or employee
16 of any attorney or any party to this action.
17   IN WITNESS WHEREOF, I have this date
18 subscribed my name.
19
20 Dated: 12/22/15
21
22
23   Carla Soares
24   CARLA SOARES
25   CSR No. 5908

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE ABOVE RULES ARE CURRENT AS OF SEPTEMBER 1, 2014. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.